

INSIDE DOPE

Learn to live and laugh—
Thus delay your epitaph

By **GEORGE F. TAUBENECK**

Stories of the Week
Gag of the Week
Definition of the Week
Profound Thought
Music, Music, Music
Real DEEP Freezing
Popular American Sound
Interesting Visitors from Both Ends
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Stories of the Week

"So you're the young man who rescued my son from the lake when the ice gave way?"

"Yes ma'am. 'Twaren't hard."

"Young man, where is his other skate?"

Founder Clara Barton of the American Red Cross was reminded of slights and insults she had suffered at the hands of self-conscious minority groups.

"I distinctly remember forgetting them," Christianed Miss Barton.

Gag of the Week

Love this slogan, seen in the office of Gibson's Frank Fisher:

"Be BIG about the other guy's mistakes. . . ."

"SNILE."

Definition of the Week

A "small town" is a place where everybody knows everything anybody else does, but can't wait to read the weekly newspaper to see if he or she has been caught doing it.

Profound Thought

It would be a strange world if everything was done as you would have it.

Music, Music, Music

Some people are always "fiddlin' around," others are more likely to "toot their own horns." Some go around "drumming up" business. Others are more inclined to "soft pedal" their activities. Actresses "pull out all stops" and also play in a "muted" style. Some people use "lots of brass" while others are more comfortable in "low keys." In home life we find both "harmony" and "discord." Maybe that is because so many people are always "harping" on things.—*Music Journal.*

Real DEEP Freezing

New combination of chromium, nickel, molybdenum, and carbon steel has been announced by the Allegheny Ludlum Steel Corp.

This alloy, useful for jet-plane construction, must be chilled at temperatures approaching 100° F. below zero before it jells and stiffens properly.

Another "bully-for-our-side" refrigeration triumph.

Popular American Sound

For the edification of American tourists who sleep lightly, a Swiss hotel provides the following piped-in recordings:

(1) Gentle patter of rain on a tile roof;

(2) Crickets twittering, bullfrogs croaking low-toned;

(Concluded on Page 2, Col. 1)

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CONDITIONING & REFRIGERATION NEWS
PAPER OF THE INDUSTRY

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Hotpoint Shows '55 Appliance Line, Announces Plans

(See Price List on Page 17)

CHICAGO—Five new refrigerators, comprising one two-door combination refrigerator-freezer, two single-door combination refrigerator-freezers, and two single-door refrigerators, have been introduced by Hotpoint Co. as part of its 1955 "Golden Anniversary" appliance line.

Also in the line are three new pushbutton air conditioners which are said to have 12% more cooling capacity than 1954 models. The three basic models are deluxe ¾-hp., deluxe 1-hp., and deluxe 1½-hp. units.

Hotpoint's distributor and district personnel were shown these and other new products and given details of a \$5,000,000 nationwide (Concluded on Back Page, Col. 1)

Marts Open Jan. 3; No Loop Hotel Rooms Left for First Week

CHICAGO—Despite its opening (Jan. 3) right after the New Year's weekend, all Loop hotels are sold out for the first week of the Winter Home Furnishings Market. The appliance and room air conditioner displays will, as usual, be concentrated in The American Furniture Mart and the Merchandise Mart.

Some outlying hotels reportedly

Appliance Firms May End Summer Mart Showings

CHICAGO—Whether or not appliance manufacturers will continue to exhibit at the Summer Home Furnishings Market will probably be debated in the halls at the Winter Market coming up Jan. 3.

A proposal to discontinue appliance showings at the Summer Market was set forth recently by A. W. Bernsohn, managing director, National Appliance and Radio-TV Dealers Association. According to reports several manufacturers are ready to back up the proposal.

"The Summer Market has no place in the appliance industry," Bernsohn declared. "Not one of the manufacturers asked about it has indicated other than complete agreement with the idea of not having it. Let's not have a summer appliance market this year and let it be what it originally set out to be, a furniture show and a darned good one."

One manufacturer who backed up the proposal declared that "with so little selling activity at the summer market, there seems little justification for it, and it has just become a habit."

have some rooms left, and the Loop hotels will probably be able to furnish accommodations during the second week.

International Harvester will show its refrigerators, freezers, and air conditioners in room 549-B at The American Furniture Mart.

U.S. Suit Charges Philco Restricts Sale of Products

WASHINGTON, D. C.—The U. S. Department of Justice has filed a civil anti-trust lawsuit against Philco Corp. charging the firm with using illegal restrictions on wholesalers and retailers, particularly in the matter of the company's attempts to have Philco products sold only through authorized Philco dealers.

Philco officials have indicated that the company will fight the government suit in the courts.

In its complaint charging that Philco has violated the Sherman Anti-Trust Act and the Clayton Act, the Justice Department alleges that Philco has been selling its products to wholesale distributors under an agreement that the distributors will confine their resale of these products to retail dealers located within the specific sales territories set up by Philco.

The department said that this alleged practice violates Section 1 of the Sherman Act.

It is also alleged by the government that retailers handling Philco products are in turn required by the company to agree to sell the firm's products to consumers only, not to other retail dealers.

It is charged that these alleged restrictions prevent retailers not approved by Philco from acquiring Philco products for resale.

It was further charged that Philco sells its complete line of (Concluded on Page 17, Col. 1)

Coleman Expands Lines To Get More Residential Sales

WICHITA, Kan.—In a bid for a larger share of the residential heating and air conditioning market, The Coleman Co., Inc., announced it would market in 1955 11 new cooling units, completely new lines of gas and oil forced air furnaces, and improved gas water heaters and oil and gas space heaters.

A total of 54 new and improved models was previewed Nov. 29 through Dec. 3 by Coleman distributors from all sections of the country.

Coupled with the most extensive product development program in (Concluded on Page 17, Col. 3)

'Foodarama' Is Feature of 1955 Kelvinator Line

(See Price List on Page 17)

NEW YORK CITY—A new product called the "Foodarama," which combines an upright freezer and a moist-cold refrigerator side by side in a single 16-cu. ft. cabinet, was announced last week by Kelvinator at a press preview of the company's 1955 refrigerator line.

The line includes an 11.9-cu. ft., single-door combination freezer and automatic defrosting refrigerator with the freezer at the bottom, and a 12.9-cu. ft., two-door combination freezer and automatic defrosting model with the freezer at the top.

The company also announced "a new approach to color in appliances" as it displayed matching pairs of refrigerators and ranges in eight color tones. The new colors are to be available on five refrigerator models and three range models.

Kelvinator's 1955 refrigerator line features increased frozen food space, larger over-all capacity, and automatic defrosting in all but three models. D. A. Packard, general sales manager, said the basic refrigerator line consists of eight models in conventional white exterior finish.

Suggested retail price of the Foodarama is \$629.95. The other refrigerators are priced from (Concluded on Page 4, Col. 1)

Shana Names Miller to Franchise, Sales Post

CHICAGO—Appointment of J. Austin Miller as vice president in charge of franchises and sales for Shana Mfg. Co., Inc. here has been announced by Harry G. Shaffer, president of the Shana firm.

Miller was formerly vice president of the Wayne-Oliver Corp., where he supervised distribution of waterless air conditioning equipment and other related products. His background also includes distributor and dealer experience with such brands as York, Carrier, Frigidaire, and McQuay.

Among the phases of Miller's background which resulted in his (Concluded on Page 17, Col. 2)



J. A. Miller

Affiliated Gas Set To Merge With Carrier

Bryant and West Coast Operations of Heating Co. Would Be Carrier Divisions

SYRACUSE, N. Y.—Directors of Carrier Corp. and Affiliated Gas Equipment, Inc., a major factor in the residential and commercial fields, have agreed to a merger plan, it was announced last week.

While directors of both companies have approved the merger plan, it has yet to be ratified by stockholders.

Affiliated's principal products are water heaters, central furnaces, boilers, floor and wall furnaces, unit heaters, room air conditioners, and year-round residential air conditioning systems. With 2,800 employees, it operates seven plants with a total floor area of about a million square feet. Its distribution organization includes 10 branch sales offices, 250 wholesale outlets, and several thousand dealers.

Cloud Wampler, president and chairman of Carrier, has stated that if the merger plans are consummated the two main operating divisions of Affiliated Gas, which are Bryant and West Coast—would become operating divisions of Carrier. The merger, Wampler declared—

"will allow the combined companies to provide a complete line of both air conditioning and heating equipment, with special emphasis on the increasingly important home field. The product range will be by far the most extensive in the air conditioning industry, of which heating is an important part."

Lyle C. Harvey, president and general manager of Affiliated Gas since its formation in 1949, will become senior vice president and a director of Carrier upon completion of the merger, Wampler stated. William A. McAfee and Francis H. Beam, now on the board of Affiliated Gas, also will become Carrier directors.

The Carrier president declared that the move would "make possible Carrier's immediate expansion into new fields with first rate plant facilities, well established trade names such as 'Bryant,' 'Day & Night,' and 'Payne' and an effective production and distribution organization."

(Concluded on Page 17, Col. 2)

Workers Buy Stock of Motor Products To Block Gen. Tire Offer

DETROIT—Some 1,200 employees, most of them CIO union members, have purchased stock of Motor Products Corp. here (parent company of Deepfreeze) in an effort to block the purchase of the company by General Tire & Rubber Co. of Akron.

General Tire is offering one share of its new 5½% cumulative preference stock for 4¼ shares of Motor Products to share holders of the latter company. This exchange offer expires Jan. 5.

"The board of directors of General Tire believes it to be in the best interests of both its own stockholders and the stockholders of Motor Products that this offer be accepted," William O'Neill, president of General Tire, has stated.

O'Neill also declared that if General Tire gained control it would actually increase operations in Motor Products plants and that there was "no need for any employee to buy stock in order to hold his job."

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INSIDE DOPE

Learn to live and laugh—
Thus delay your epitaph

By **GEORGE F. TAUBENECK**

(Concluded from Page 1, Col. 1)

(3) Pinging of a cash register. THAT really does the trick when all else fails sleepless Americans.

Interesting Visitors from Both Ends

Australia is enjoying a tremendous household refrigerator boom, according to J. C. Donahoe of Lovelock's (Sydney and elsewhere). Sales this year total 350,000 units—to a population of 10 million.

In the United States (160 million people) that would be equivalent to 5,600,000 refrigerators! Leading makes are Westinghouse, Kelvinator, and General Electric. All are manufactured in Australia under license agreements.

Both Mr. Donahoe and his lovely wife were in Detroit on the tag-end of a four-month tour of Europe and America. Because of his solid connections, Mr. Donahoe learned plenty in our country—including this surprising news:

Philco people told him that all present room coolers will be obsoleted within three years, by development of a "revolutionary new method of air conditioning."

Another interesting visit to our offices in Detroit was that of 12 German business paper editors.

They report that German refrigeration engineering has kept pace with ours for industrial stuff; but that in consumer products they lag far behind. In Europe selling and merchandising techniques are relatively non-existent. They blame that for their failure to do much with household refrigerators, home freezers, and room coolers.

Incidentally, they seemed quite sincere in saying that West Germany admires and respects the United States above all other nations, and appreciates the help we have given them. This, despite the fact that our soldiers are there as Occupation Troops.

Out of Our Mailbag

Andre Delalande
Paris, France

Editor:

I will tell you a good one and which has the superiority on those you generally tell of its perfect authenticity.

A few days ago, I was in Bahrain (actually, nobody knows where it is, except one or two pilots of the Middle-East Air Line).

I was taking pictures there and

an American fellow who was making pictures, too, crossed my way. We took a little chat and after five minutes we were friends from childhood (you know how are those American guys).

Then, he abruptly told me:

"You Englishmen. . . ."

"Excuse me, but I am not an Englishman."

"What the Hell are you?"

"Merely an average Frenchman."

"Oh," he said surprised, "you speak such a funny English that I thought you were an Englishman."

Another oriental joke:

"How much will you give me for my wife?"

"Nothing at all."

"It's a deal. Take her away."

ANDRE DELALANDE

Flakice Corp.
Brooklyn, N. Y.

Editor:

Your "Inside Dope" column headed, "What's the Secret of Our Success?" was splendid and certainly hit the nail on the head—as you have been doing for many years.

I can add nothing to the main theme of your column except perhaps a slight supplement as shown in the enclosed reprint entitled "The Small Manufacturing Company as an Opportunity for Engineering Graduates."

CROSBY FIELD

U. S. Court of Appeals Finds No Patent Infringement In UsAirco Air Conditioning Units Using Evaporative Condensers

DENVER—A decision in favor of United States Air Conditioning Corp., Minneapolis, has been handed down by the United States Court of Appeals for the Tenth Circuit, at Denver, in a patent infringement and unfair competition suit brought against U. S. Air Conditioning by Governair Corp. of Oklahoma City.

UsAirco officials said the decision "completely exonerates United States Air Conditioning Corp.'s central station 'packaged' air conditioning units of the RK and DRK type, containing evaporative condensers, of all charge of infringement of [John D.] Wilson patent No. 2,297,928, dated Oct. 6, 1942, and of all charges of unfair competition."

EXCERPTS FROM DECISION

The decision said, in part:

"From a judgement holding the patent valid and infringed and adjudging United guilty of unfair competition, United has appealed."

"The patent relates to a composite air conditioning unit for air conditioning space in buildings. . . ."

"Claims 1 and 2 of the patent are in suit. Claim 1 is set out in subjoined Note 3."

"3. '1. An air conditioning system of the unit type comprising the combination of, a frame, means separating said frame into a compressor section in a lower portion of the frame and at one end thereof, an air conditioning section above said compressor section, and an evaporative condenser section extending vertically adjacent said compressor and said air conditioning sections, refrigerating means in said frame and comprising a motor and a compressor operatively interconnected and mounted within the compressor section, a condensing coil within the evaporative condenser section, a conduit connected to the outlet of the compressor and said coil to conduct the compressed refrigerant to the coil, a tank for coolant liquid below said coil, a pump operatively connected to said motor, a pipe line from said tank to said pump, means including a plurality of spray nozzles for conducting liquid from the exhaust port of the pump and spraying the coolant liquid upon said condensing coil, an exhaust fan within the frame above the coil for circulating air over the coil counter current to the movement of the coolant liquid, an expansion coil in said air conditioning section of the frame, an outlet conduit from said condensing coil to the expansion coil and including a plurality of expansion valves for admitting the compressed refrigerant to the cooling coil, and fan means mounted within said cooling section for circulating air from the exterior of the frame through said cooling coil whereby such circulated air is conditioned.'"

"Claim 2 differs from Claim 1 only in that Claim 2 includes a refrigerant chamber."

"When the respective individual functions of the elements assembled are not changed and where they produce no result other than the added results of such functions, there is a mere aggregation of elements. When the elements are so united that by their reciprocal influence upon each other, or by their joint action on a common objective, they perform additional functions and accomplish additional results, the union is a true combination."

"The result must be due to the joint and cooperative action of all the elements, not a mere aggregation of the several results of the separate elements acting independently. . . ."

"The conjunction or concert of known elements must contribute something; only when the whole in some way exceeds the sum of its parts is the accumulation of old devices patentable."

"All of the elements in the combination of the patent in suit are old and were well known in the art. Each element performs the same function and accomplishes the same result that it did in other well known combinations."

CLAIM OF INVENTION MUST REST ON TWO THINGS

"Wilson's claim of invention must rest, we think, on two things: 1. A water pump and a compressor driven by a single motor, and 2. The compactness of the arrangements of the several elements in a

single unit.

"It is true that the granting of a patent creates a presumption of validity, but that presumption is rebuttable."

"It is well settled that the mere carrying forward or extended application of an earlier idea or conception of another, involving a change only in form, proportion, or degree, where the same work is performed in the same way by substantially the same means, although with better results, is not invention."

"We are of the opinion that Wilson merely carried forward and made a more extended application of earlier teachings disclosed in the prior art, which involved only a change in form, proportion or degree, and that in his device the same work is performed in the same way by substantially the same means, although, perhaps, with improved results."

"We are further of the opinion that what Wilson conceived would have been obvious to a person having ordinary skill in the art to which the subject matter of his patent pertains."

CLAIMS HELD INVALID

"Accordingly, we conclude that the claims in suit are invalid for want of invention."

"If we assume that the patent in suit is valid, then the units first manufactured by United in 1942 and continuing up to the middle of 1943 infringed the claims in suit, but damages for infringement by those units are barred by the six-year statute of limitations."

"The units thereafter manufactured by United eliminated the element of a pump and compressor driven by a single motor and eliminated a plurality of expansion valves for admitting the compressed refrigerant into the cooler part."

"As originally filed, the application for the patent contains seven claims. After several rejections, the application was amended by the addition of Claims 8, 9, and 10. Eventually, Claim 8 became Claim 1 and Claim 10 became Claim 2 of the patent as issued."

"Claim 9 included a plurality of expansion valves for admitting the compressed refrigerant into the cooling unit. That claim was rejected."

"Responsive to the rejection, the applicant filed an amendment to the claim, cancelling the words 'a plurality of expansion valves' and substituting therefor the words 'an expansion valve.' The claim, as thus amended, was rejected."

"A further amendment was presented and the claim again was rejected. The applicant did not appeal. He acquiesced in the rejection of the claim and accepted a patent with two claims, each of which expressly included a plurality of expansion valves for admitting the compressed refrigerant into the cooling coil."

"Since Wilson acquiesced in the rejection of the claim calling for an expansion valve and accepted a patent for claims embracing a plurality of valves, he is limited to a device embodying a plurality of such valves, under the well settled doctrine of file wrapper estoppel."

"The unit manufactured and sold by United since 1943 does not use nor employ a plurality of expansion valves. It includes only a single expansion valve. Moreover, the pump and the compressor in such units are driven by separate motors. Accordingly, we are of the opinion that the devices manufactured by United, within the six-year period of the statute of limitations, do not infringe. . . ."

"The judgment is reversed and the cause remanded, with instructions to enter a judgment in favor of United, dismissing the action."

Presenting the Supreme in Self-Contained

AIR CONDITIONERS

3 TONS THROUGH 20 TONS



With:

Semi-Hermetic
or
Open-Type
Refrigeration
Compressors

FIVE
YEAR
WARRANTY

For:

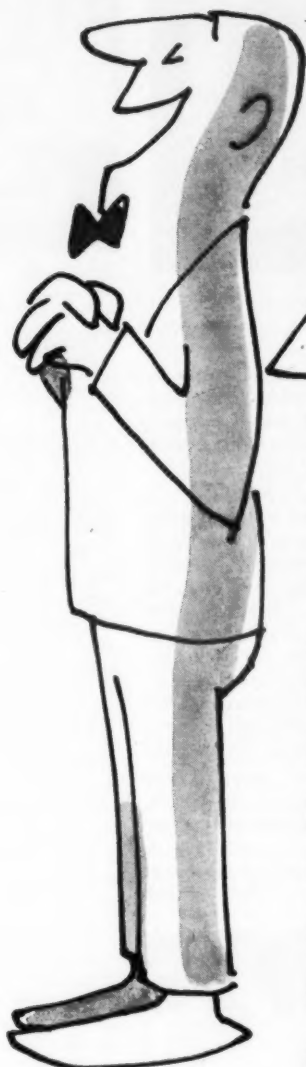
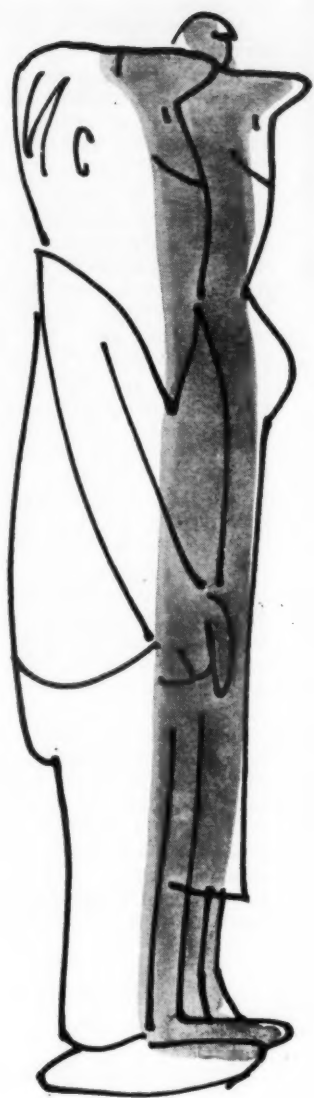
Stores
Offices
Theaters
Businesses
Test Rooms
Manufacturing
Residential
Wherever Exacting
Comfort Cooling
Is Desired

DISTRIBUTORS! DEALERS! REPRESENTATIVES!

Our new policy of marketing Air Conditioners will be of interest to you. Several areas still open. Write or wire American Coils Co., Sales Department today.



AMERICAN COILS CO., 360-64 THOMAS ST., NEWARK 5, N. J.



It's great to be a Carrier
Home Weathermaker Dealer!

Because Carrier Distributors
are extra helpful!

No, we don't guarantee that our Carrier Distributors are musical virtuosi. But even if they can't accompany you on the violin, they can be at your side whenever you need help in closing a tough sale. And they're especially nice to have around! Because the BIG extra Carrier Distributors have over any other distributors is that...

Carrier Distributors know air conditioning!

These men grew up with Carrier in the air conditioning business. Twenty-five of them have been associated with Carrier for more than twenty years! Today, they're the most experienced air conditioning distributors in the industry!

And you can count on them for encouragement, service and on-the-spot assistance, the like of which you'll get no place else! Your Carrier Distributor actually has Carrier-trained advertising and merchandising men on his payroll, whose job it is to help you plan your advertising! Another important extra...

You have the Carrier name to sell!

Carrier doesn't make light bulbs, TV sets or phonograph records—just *air conditioning*! They're the people who know air conditioning best! Your customers know it! And your products show it!

Take the Carrier line of Home Weathermakers; they're the country's biggest selling home air conditioners! More air conditioned homes are equipped with Carrier Weathermakers than with any other make. Would you like to get in on the home air conditioning business? Your Carrier Distributor has a wonderful "How to Get Started" course, in which he'd be glad to enroll you.

Mail the coupon! Learn Home Air Conditioning!

Look what you get from the Carrier Distributor!

A special course: "How to Get Started in the Home Air Conditioning Business!" Estimating, design, application, sales, the works!

A special "Starter Package" to help you let the world know you're a Carrier Dealer! Signs, banners, ad mats, direct mail and other promotional pieces!

Low-cost financing and warehousing plans to ease your inventory problems! Your distributor carries a complete line to supply you within hours instead of days.

Four retail financing plans designed to make payments painless for your customer! You can give a prospect 36 months to pay! You can let his first monthly payment wait 'til May!

Continuing, on-the-spot sales, advertising and engineering help whenever you need it! Follow-up training! Custom-built advertising plans! Engineering back-up!

Look at the Weathermakers you have to sell!

The Carrier Year-round Weathermaker is illustrated below. It heats and cools the whole house. It burns gas or oil; it is available in air-cooled or water-cooled models. Other air-cooled Weathermakers add onto any existing warm air system, install independently of wet heat systems. Together they make up the industry's best selling line of home air conditioners!

Carrier AIR CONDITIONING • REFRIGERATION
INDUSTRIAL HEATING

CARRIER CORPORATION, 310 S. Geddes Street, Syracuse, New York

Please put me in touch with the Carrier Distributor who can enroll me in that Home Air Conditioning Course.

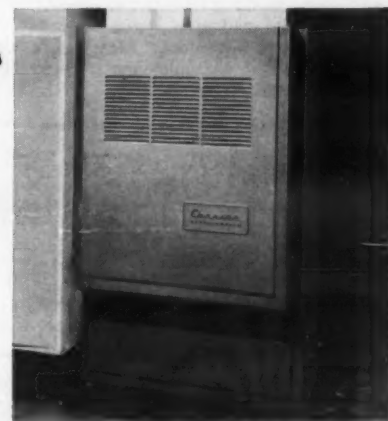
I'd be interested in selling:

<input type="checkbox"/> Carrier Residential Weathermakers	<input type="checkbox"/> Carrier System Weathermakers
<input type="checkbox"/> Carrier Self-contained Weathermakers	<input type="checkbox"/> Carrier Room Air Conditioners
	<input type="checkbox"/> Carrier Ice-makers

Name _____

Street _____

City _____ State _____



SOMETHING NEW IN FOOD-KEEPING equipment for the home is the "Foodarama." Built by Kelvinator, it combines an upright freezer and a moist-cold refrigerator side by side in a single cabinet.



KELVINATOR deluxe 11.6-cu. ft. refrigerator.



KELVINATOR combination refrigerator and freezer with freezer on bottom.

Kelvinator Line Features 'Foodarama'--

(Concluded from Page 1, Col. 4)
\$199.95 to \$529.95.

The two sections of the Foodarama are divided by an insulated wall, and each has its own vertical door. The two doors open from the center outward. When both doors are open, the Foodarama "presents to the homemaker a 7-ft.-wide panorama of foods from which to choose," it was pointed out.

Development of the Foodarama began 2½ years ago as a top-level management project, Packard said.

"A new concept in refrigeration equipment for the home, the Foodarama combines more than 11 cu. ft. of fresh food storage, and nearly 5 cu. ft. of frozen storage," he explained, adding: "As a novelty there is even an unrefrigerated

door rack for bananas."

In spite of its large capacity, he said, the Foodarama stands only 60 in. high, 47¾ in. wide, and 26½ in. deep. It occupies 9 sq. ft. of floor space, "less by far than any pair of refrigerators and upright freezers currently available."

Packard said surveys indicate the market for such a product lies primarily in three areas: (1) Existing homes with larger kitchens; (2) homes under construction "for the discriminating buyer"; and (3) replacement for the larger two-compartment refrigerators sold during the 1930's.

"Survey findings show conclusively that a high percentage of rural homes and practically all custom suburban homes have ample floor space for this new prod-

uct," Packard said.

Packard said the Foodarama is being priced at \$629.95 to make possible the widest possible market application. The price is based on anticipation of large volume sales for a product of this type.

The refrigerator-compartment door features a new "breakfast bar" that stores breakfast staples together in a special section. It includes twin egg racks for 16 eggs, space for a full pound of bacon, and containers for two different flavors of fruit juices. Additional door storage includes butter and cheese compartments, and deep shelves for bottles and snacks.

Refrigeration for the entire cabinet is provided by a single "Polarisphere" compressor. The refrigerator section is cooled by a series of refrigeration coils concealed behind a metal plate called

a "humidiplate," along the back of the cabinet interior. The humidiplate device is designed to control humidity and defrost itself automatically without user attention, during the off period of the normal refrigeration cycle. A single temperature control dial regulates the entire system.

There are five shelves in the refrigerator section, three of which are the roll-out type, which may be taken right out of the refrigerator and used as serving trays for refrigerated salads or desserts.

The freezer section will store 166 lbs. of frozen foods. There are four refrigerated shelves, plus two removable shelves for pastry and sundry frozen items. It has its own separate control dial to lower the temperature for fast freezing.

The freezer door includes shelf storage for 2 gals. of packaged ice cream and racks for 21 cans of frozen juices. In an unrefrigerated space at the bottom of the door is a rack for a 75-ft. roll of freezer-wrap, and a special bin at an ideal temperature for storing bananas, it was noted.

Packard said the refrigerator line was designed specifically to incorporate the three most important factors influencing refrigerator purchases, as shown by consumer surveys. The latest industry survey, he said, rated these factors in order as more freezing space, automatic defrosting, and greater food storage space.

The basic Kelvinator line includes three 8-cu. ft. models, two 10's, and three in the 12-cu. ft. size bracket, with each size group up to 1-cu. ft. larger in capacity than comparable 1954 models. Frozen food storage capacity in all three size groups has been increased from 25% to double 1954 models, it was stated.

Automatic defrosting is in all of the "Magic Cycle" type, timer controlled, pushbutton controlled, and cyclic, Packard said. The cyclic type is used in the fresh food compartments of two-temperature refrigerator-freezer combinations. In this type of system, defrosting takes place without user-attention during the off period of the normal refrigeration cycle.

The 8-cu. ft. model KA-81, in a cabinet 24 in. wide, provides total frozen food storage capacity of 56 lbs., including 37 lbs. in the full-width freezer chest and 19 lbs. in the meat tray. The door furnishes more out-front storage with four shelves. Defrosting is manually operated.

A companion model, KS-81, features in addition a full-width crisper, a butter keeper in the door, and decorative shelf fronts. Another 24-in., 8-cu. ft. model, KP-81, offers pushbutton automatic defrosting.

Also in the line is the 10.5-cu. ft. model KS-110, a manual defrosting refrigerator in a 28-in.-wide cabinet. It features 70 lbs. of

frozen storage capacity, five door shelves, and door chests for a pound of butter and a 2-lb. package of cheese.

Another model is the KP-110, also with a total of 70 lbs. frozen storage capacity, plus pushbutton automatic defrosting, and aluminum roll-out and slide-out shelves with decorative gold fronts.

Deluxe in features and size is the 11.6-cu. ft. model KA-120, featuring time-controlled Magic Cycle automatic defrosting. It has frozen food storage capacity of 80 lbs., roll-out shelves, five door shelves, and butter and cheese compartments in the door. The cabinet is 31 in. wide and 61 in. tall.

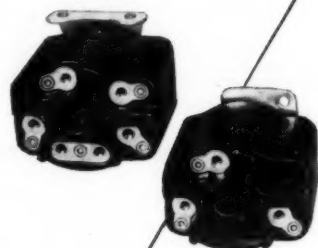
To meet growing consumer interest in even more frozen storage in the 31-in. cabinet width, Kelvinator offers a new two-temperature model KC-120, with a moist-cold refrigerator section at the top and a separate 100-lb. frozen food chest at the bottom.

The refrigerator section is cooled by refrigeration coils mounted behind a humidiplate along the back of the compartment. The coils control moisture as well as cold, and defrost automatically on the off cycle.

For those who want a refrigerator-freezer combination with separate doors for each section, there is the 12.9-cu. ft. model KC-130. It has a separately insulated freezer chest at the top, with 85-lb. capacity. An ice cream keeper in the freezer compartment door holds three ½-gal. size containers.

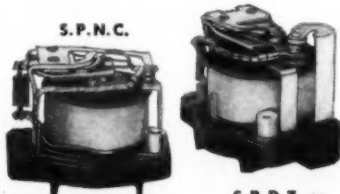
Mr. Air Conditioning
Manufacturer

These R-B-M Relays



WILL SIMPLIFY YOUR CONTROL PROBLEMS

Developed expressly for air conditioning and refrigeration. While designed primarily for capacitor motor starting service, relays are also available with normally open contact rated 1 H.P.—115 Volts and 1½ H.P.—230 Volts A.C. for sequence starting, motor interlocking or general purpose application.



S.P.D.T. or
S.P.N.O.

- Totally Enclosed
- Snap-action Contacts
- Non-positional Operation
- Accessible Wiring Terminals
- Underwriters' Approved. File Nos. 5A1984 and E12139

Write Dept. M-12 for Details Today.
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ESSEX WIRE CORPORATION
Legansport, Indiana

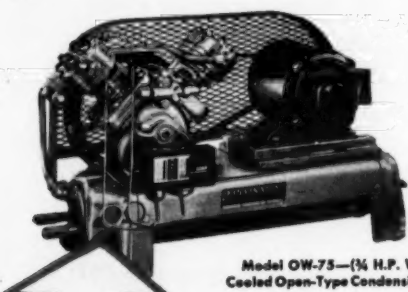
Controls for Electronic, Refrigeration, Industrial, Appliance, Communication and Automotive Industries.



Get KELVINATOR and you know you get Trouble-Free Service!

Get Polarsphere
Sealed Condensing Units
with a Proven, Unequalled
Record of Dependability!

Internally mounted, hermetically sealed units. Light in weight with exceptional structural strength. Give long, efficient, quiet operation. The finest refrigeration mechanisms you can buy. A complete line from 1/5 H.P. through ½ H.P. for a wide range of applications.



Model OW-75—(½ H.P. Water-Cooled Open-Type Condensing Unit)

OPEN-TYPE CONDENSING UNITS EXTRA CAPACITY—EASIER TO SERVICE

- ★ Air-Cooled ★ Water-Cooled ★ Combination Air & Water Cooled ★ Space-Saving Truck Units

No other open-type condensing units can compare with Kelvinator for performance—long trouble-free service, and price. Extra-large air-cooled condensers; extra-capacity, water-cooled condensers. Extra-heavy-duty construction and precision built throughout. A complete line from ¼ H.P. air-cooled through 5 H.P. water-cooled.



Model K352CR—¼ H.P. Capacitor Start

PACKAGED FOR
HOUSEHOLD &
COMMERCIAL
CABINET
REPLACEMENTS

High
Capacity!
Competitively
Priced!

A complete line of 10 Low and High Starting Torque models. ¼ H.P. through ½ H.P. All models equipped with "plug-in" type relays. Wiring and mounting bracket on capacitor start models.

Model DK352C
¼ H.P. Capacitor Start

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Commercial Dept. Kelvinator Division
American Motors Corp., Dept. AC-11B
14250 Plymouth Road, Detroit 32, Michigan

I am interested in more information about
☐ Sealed Compressors. ☐ Open-type condensing units.
☐ Sealed-type condensing units.

Name _____ Title _____

Company _____

Street Address _____

City _____ Zone _____ State _____

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Specialists in Refrigeration Since 1914

ENGINEER

Compressor Design Engineer by large midwest manufacturer for compressor research program. Prefer Mechanical Engineering graduate, 30 to 45 years of age, with experience in designing and developing small refrigeration compressors and/or air compressors.

All replies will be treated confidentially. Please give full particulars in reply.

Box A5115, Air Conditioning & Refrigeration News

Servel To Shut Down Civilian Production During January

EVANSVILLE, Ind. — Most of Servel's civilian manufacturing operations will be closed during the month of January to permit adjustment of inventories and to prepare for the manufacture of new 1955 products.

Production will be resumed early in February.

In its announcement of the approaching shutdown, Servel stated that defense production in its aircraft wing plant will continue without interruption. The manufacturing service division will also remain in operation.

Approximately 1,700 employees will be affected by the shutdown.

According to a Servel spokesman, the plant has built and warehoused ample civilian products to take care of all orders for current models. When production is resumed after the shutdown, it will be on new 1955 models.

"Next year's appliance line," Duncan C. Menzies, Servel president, said, "will continue to include gas and electric household refrigerators, Wonderbar refrigerettes, room air conditioners, home freezers, and automatic water heaters. The 1955 models will embody operating improvements, style developments, and exclusive Servel features for which consumers have indicated a great preference."

The new appliances will be introduced to distributors and dealers about March 1.

Gibson Appoints Moyer Eastern Area Sales Head

GREENVILLE, Mich. — Arthur L. Moyer has been appointed Gibson divisional sales manager for



A. L. Moyer

New York City and portions of New York, New Jersey, and Pennsylvania, according to F. L. Sacha, Gibson sales manager.

Moyer comes to Gibson after years of experience with various appliance manufacturers. He will assist eastern distributors in promotion sales for Gibson's 1955 line of appliances.

NARDA '55 Appliance, Laundry Blue Books Ready

MADISON, Wis. — The 1955 official NARDA Kitchen Appliance and Home Laundry Blue Books are now available according to the National Appliance Trade-In Guide Co. The Kitchen Appliance Blue Book covers refrigerators, food freezers, electric and gas ranges. The Home Laundry Blue Book includes washers, dryers, ironers, and vacuum cleaners.

Both books carry completely new trade-in values on the majority of major appliances in use today, as well as revised copies of appraisal guides. Forward is by Al Bernsohn, managing director of the National Appliance and Radio-TV Dealers Association.

Prices are \$5 per copy or \$7 for the pair. Orders can be placed through the National Appliance Trade-In Guide Co. at 2132 Fordem Ave., Madison 1, Wis. Quantity prices are also available.

Named Carrier Dealer

MIAMI, Fla. — Conditioned Air Corp. Carrier distributor for southeast Florida, has announced the appointment of Biscayne Air Conditioning Co., Miami, as an authorized contracting dealer for sales and service of Carrier year-round air conditioning equipment.

Birmingham Dealers Offer 'Seal of Assurance' To Promote Confidence

BIRMINGHAM, Ala. — Concerned over an increase in unethical advertising and growing public apathy toward sales and promotions, the Birmingham Retail Furniture & Appliance Dealers Association has launched a "Seal of Assurance" program designed to promote public confidence in advertising.

The program involves the use of a black and gold seal on a window display card and in advertising. On the seal is the statement: "Your guarantee that merchandise is as advertised." The large display card identifies the store as a member of the association.

Over a period of years consumers have come to recognize fake price offers and "come-on" deals and have become suspicious of gimmicks, price cuts, "free" ties, etc., it was pointed out.

The Seal of Assurance program was devised to regain the confidence of the public in all appliance and furniture lines, it was said.

O. L. Webb, vice president of Haverty Furniture Co. and former association president, heads the Seal of Assurance Committee. Earl McCauley, president of McCauley's Furniture, Inc., is president of the association.

Nov. Was Really 'Appreciation Month' Dealer Chalks Up 113 Major Appliance Sales; Small Daily Ads Get the Credit

TRAVERSE CITY, Mich. — Record sale of 113 major appliances grossing more than \$30,000 was chalked up during Appreciation Month — November — by Paul Garthe, Inc., Frigidaire dealer here.

The third such event staged by the firm, this year's sale outpulled the 1953 sale, which moved 69 appliances, and the 1952 event, which sold 70 appliances.

It also marked the dealership's 10th anniversary.

A special "gimmick" is a sales-building feature of Garthe's Appreciation Month. One purchaser during the month receives his appliance free. At the end of the month the lucky individual is refunded whatever he had paid for, or on, the appliance.

Considerable advertising was employed to promote this year's sale. Television spots and newspaper advertising were used.

Instead of making one or two big "splashes" in the local daily paper, however, Garthe used small space every day, thus achieving a cumulative effect.

Effectiveness of this approach seems indicated in the fact that most of the 113 appliances were

sold in the last two weeks of the month.

Breakdown of the month's sales shows 54 washers and dryers, 12 ranges, nine refrigerators, four furnaces, three water heaters, an oil space heater, 24 television sets, a water pump, and five used appliances (selling for over \$100).

Bowers Distributes Norge In Va., N.C. Tidewater Area

CHICAGO — Norge Div. of Borg-Warner Corp. has announced the appointment of Bowers Wholesale Corp., Norfolk, Va., as its distributor for the Tidewater area of eastern Virginia and North Carolina.

The newly-appointed distributor is expanding its sales staff by 50% according to George H. Bowers, president. The area covered by the firm comprises 11 counties in Virginia and 22 counties in North Carolina.

C. E. Woodsend is secretary-treasurer and manager of the company. L. H. Pierce is service manager. The firm was established in 1924 as Dix-Bowers Co., Inc.

Hullsiek In Kelvinator Sales Planning Post

DETROIT — Appointment of William L. Hullsiek as manager of sales planning for refrigeration



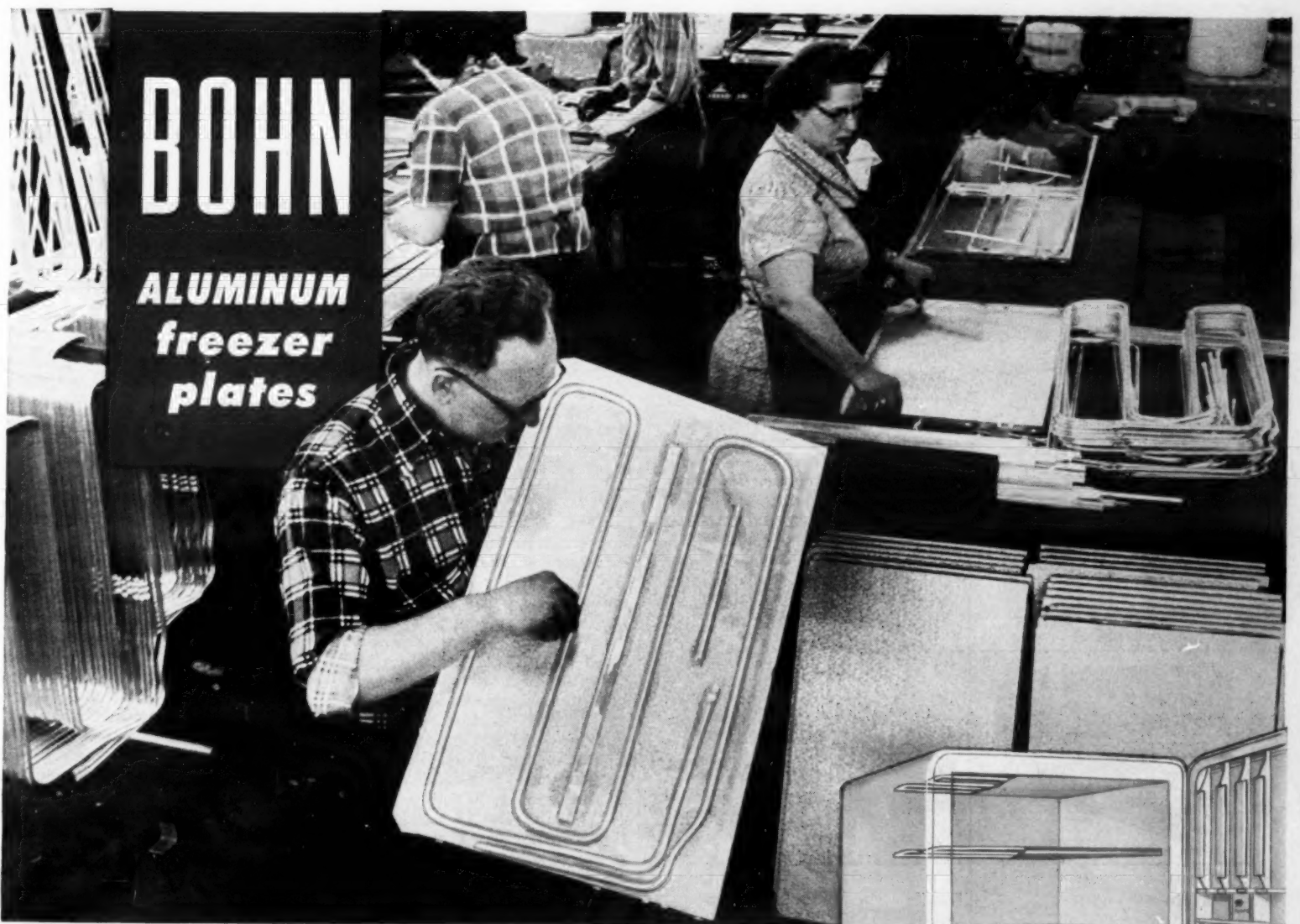
W. L. Hullsiek

products was announced recently by Walter Jeffrey, manager of sales planning, Kelvinator Div. of American Motors Corp.

Jeffrey said Hullsiek had been recalled to Detroit headquarters to assume sales planning responsibilities for Kelvinator's key refrigerator and home freezer lines. He had served since last spring as assistant general sales manager of Altorfer Brothers Co., American Motors' laundry equipment subsidiary which is located in Peoria, Ill.

He joined Kelvinator in 1945 as a district manager in the Minneapolis zone, after four years' military service in World War II. He became zone advertising and sales promotion manager in 1947, and two years later moved to Detroit headquarters as advertising manager for Leonard appliances.

In 1952 he was appointed advertising manager for Kelvinator ranges and kitchen cabinets.



CONTINUOUS CONTACT ALUMINUM TUBING freezes food faster at less cost.

Bohn aluminum freezing surfaces—provide a uniformly low temperature that assures the safest possible food storage. Seamless aluminum tubing is bonded to the aluminum plate in continuous contact. This provides better conductivity for faster freezing at less operating cost. Bohn aluminum freezer plates are also rust-proof to insure years of trouble-free service, and non-toxic for greater food protection.



NEW BOOKLET
"Bohn Products and How They are Made."
Write for free copy of this pictorial tour through Bohn plants.

EVAPORATORS • FREEZING PLATES • TUBING • COILS AND CONDENSERS
BOHN ALUMINUM AND BRASS CORPORATION
1400 LAFAYETTE BUILDING • DETROIT 26, MICHIGAN
Sales Offices: • BOSTON • CHICAGO • CLEVELAND • DAYTON • DETROIT
INDIANAPOLIS • LOS ANGELES • MILWAUKEE • MINNEAPOLIS • MOBILE
NEW YORK • PHILADELPHIA • ROCHESTER • ST. LOUIS

Bohn Freezer plates made with seamless aluminum tubing freeze food faster at less cost, provide uniformly low temperature throughout freezer.

Commercial Refrigeration

Jones Gets Sales Post At Ice Machine Div.

ALBERT LEA, Minn.—Louis J. Jones has been named assistant sales manager of the Ice Machine division of American Gas Machine Co., national manufacturers of commercial refrigeration equipment in Albert Lea, Minn.



Louis J. Jones

The appointment was announced by R. J. Lickteig, sales manager of the firm, who pointed out that Jones will also supervise all advertising and public relations activities.

Jones will be responsible for coordinating all details connected with ice machine sales, including the processing of orders and scheduling of shipments, according to the company.

He was formerly advertising and sales promotion manager of the air conditioning division of Sidles Co., Omaha, Neb.

E. R. Wolfert Elected Seeger Vice President; Other Officers Re-elected

ST. PAUL—Edward R. Wolfert was elected a vice president of Seeger Refrigerator Co. and all other officers and directors were re-elected at the company's recent annual stockholder's meeting held here.

Wolfert, manager of engineering in the company's Evansville, Ind., division, was promoted to a vice presidency last August. His election was in the nature of a confirmation of the appointment.

Officers re-elected were Walter G. Seeger, board chairman; John S. Holl, president; N. H. Griebenow, J. W. Krueger, and John W. Seeger, vice presidents; C. W. Moberg, secretary and treasurer; Walter A. Holt, assistant secretary and assistant treasurer; and I. A. Warren, assistant secretary.

Directors re-elected were Walter G. and John W. Seeger, Holl, Griebenow, Krueger, E. P. Brooks, R. E. Brooker, Edward Gudeman, and J. R. Leavell.

Building and Using Strong Sales Force

Commercial Distributor Describes How He Selects, Trains, Compensates, and Backs Up His Salesmen

By George M. Hanning

NEW YORK CITY—How he has set up and operates a staff of "professional salesmen" to sell commercial refrigeration equipment was described at the recent convention of the National Commercial Refrigerator Sales Association by Ray Winther, president of the Ray Winther Co. in San Francisco.

Requirements of a Sales Manager

"The man who looks after the sales department," he began, "in order to be successful in his field, must be a grocer, a produce man, a meat man (both service and self-service), and a delicatessen operator all in one.

"He must be somewhat of an architect, a designer, a builder, an electrical engineer, and a plumber. He must be a psychologist to maneuver the buyer to the dotted line. He must be a psychiatrist to find the real need-pressure in the buyer's mind. He must be a financial expert, a real estate promoter, and an advertising man.

"He must be a second 'Mr. Anthony' to answer all questions and he must be a marital relations expert and a good listener. And, incidentally, if he has some small knowledge of the refrigeration business, it may help!

"Now this man, and they are so easy to find, is your sales manager, but he is only a figurehead because the real producer of sales and all that goes with it is the salesman who must actually be quicker on the draw than his boss.

"We have nine professional salesmen working for our firm plus three members of management who are directly classed as being in the sales department. The three management men have 15 to 20 years' seniority. Four salesmen have 5 years, one man 4 years, one man 3 years, one man 2 years, and one man 1 year. We are now seriously looking for another man.

Start with Sales Material And Build Salesmen

"This schedule reveals one of our fundamental beliefs of sales management. We are constantly on the look-out for good sales material—notice I say *sales material* and not salesmen.

"We have never successfully hired an experienced salesman from out of town or from a competitor. Last year temptation overcame us or our memories became dimmed, and we hired an experienced hot-shot that lasted about six months at a loss of over \$2,500 to the firm.

"We interview all men who take time to come to see us. If a likely prospect appears, all three management men interview the man individually and thoroughly and if, in later discussion, we agree that he has possibilities for us, we ask him to submit to a test at our ex-

pense. I quote and heartily endorse the testing company's own claim—'The tests do not eliminate error, but they do improve the sales manager's batting average.'

"We have spent \$20 for each test, or a total of over several hundred dollars for testing our sales force and applicants and we feel that we are better off than on a hit or miss basis.

"We use Sadler & Associates of Chicago as our testing concern and I give you their name because we have found their service excellent.

"Where do these men come from? We apparently draw them to us because the word gets around that we pay professional scale for professional work, and when you do you will attract the better type of man.

"Then, if you give a good man a real incentive to make more money by producing more you will benefit because every time a salesman makes a dollar the firm usually makes a profit, too.

Compensation

"Specifically, we pay our men \$87.50 to \$105 per week without any strings. This is not a draw. It is a salary and expense allowance. Plus quality bonuses on the better deals.

"In addition, we now work on a new concept of volume bonus. New, that is, for us, in that a salesman starts participating in the fruits of the sales early in the year and as his sales accumulate during the year his volume bonus becomes larger with each additional sale.

Management Sells from Same Price List

"We do not have a price list for salesmen and a different one for management—all men can make the identical deal and our buying public has learned that such is the case, and our men demand more respect because of it.

"We do not have trouble with the customer who can do business with the boss only. This, too, inspires the salesman and gives him confidence.

"In addition to the foregoing forms of compensation we still maintain our monthly merchandise order plan to the wife of the salesman whose installed sales exceed \$6,000 for the month, plus a new innovation of a \$25 merchandise order to the salesman himself if he makes it for his wife three months or more in a row. This is just an extra and can amount to \$200 or \$300 per year.

Profit Sharing Plan

"We have also started a profit sharing plan based on one outlined by Vance Sanders & Co. which makes it possible for the men to have to set aside for future retirement an amount that could be

equal to 15% of his annual basic compensation or \$700 to \$1,000 per year to accumulate over a period of time—just like a savings account.

"We have selected men carefully from a group of high caliber men attracted to us by honest pay and honest pricing.

Trainees Actually Practice Product Demonstrations

"How do we train these men? Sales meetings and more sales meetings! We actually practice demonstrating equipment to each other and we make a contest out of it. The prizes go to the top three demonstrators but not one loses because they all become better salesmen and admit it.

"Have you ever tried to talk for 20 minutes about a piece of your own equipment—without questions coming to you and without mentioning competitive equipment? It is real training.

"The new man, or trainee, learns his own equipment well because he hears the demonstration eight times from eight different men on three separate nights, then does it once himself.

"We also set up teams of three men each and they make an overall presentation of a complete remodel job. The three men in turn act out the part of the salesman, the buyer, the buyer's wife, or Joe the Butcher, and the situations that come up present real problems because the men hear customer objections and learn how to overcome them.

Men Report on Articles In Trade Publications

"We subscribe to all the trade publications and allocate them to the salesmen who in turn report at the sales meeting on articles of unusual interest.

"We have subscribed to and completed, with great effort at times, sales courses such as Worsham's, Men Who Sell, and Selling For Keeps. There are no bad sales courses if they are used properly and much good has come from their use. Some of them, however, are extremely hard on management!

Each Man Does Own Drafting

"We do very little nurse-maiding with our men. We send them out as observers with the experienced men to help measure up jobs, and to teach them drawing and lay-out because each man is expected to do his own drafting.

"We have learned that men who draw can make changes at the time of presentation and thereby gain more respect and confidence from the prospect.

"The new men will show work habits within a few months and if signs are favorable we are not concerned about the lack of orders,

(Concluded on next page)

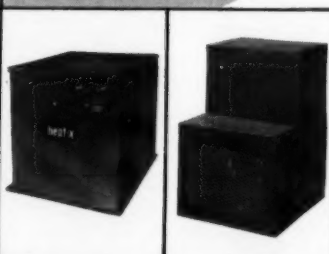
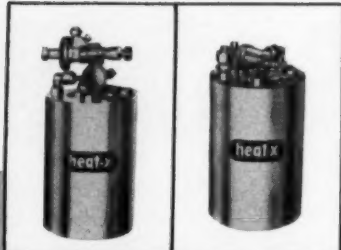


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Heat Transfer Products By

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Heat-X products are engineered and manufactured by heat transfer specialists. High side or low side, they'll provide a better installation... insure trouble-free operation. Don't risk your reputation by settling for less than the best.



Cast aluminum liquid coolers that eliminate danger of freeze-up damage... heat interchangers of exclusive inner-fin construction for extra efficiency, low pressure drop... high capacity cooler compressor assemblies... combination air- and water-cooled condensers for tremendous water savings, flexible installation... these are a few of the Heat-X products—a line designed and built by heat transfer specialists with your needs in mind.

WRITE TODAY FOR FREE ILLUSTRATED BULLETINS.

THE HEAT-X-CHANGER CO., Inc.

BREWSTER - NEW YORK

on every milk cooler replacement

INSTALL RANCO...TO BE SURE!



Ranco Inc.

COLUMBUS 1, OHIO

WORLD'S LARGEST MANUFACTURER OF REFRIGERATION CONTROLS



Ranco Replacement Reference.

No. 1544 lists almost 5,000 replacement controls... the most complete line in the industry. Purchase your copy of this big new manual from your Ranco wholesaler now.

Award for Services

IN APPRECIATION for his services as president of NCRSA during the past year, R. J. Wischusen (l.) is presented a desk set by I. W. Shell, a past president of the group.



Building a Strong Sales Force--

(Concluded from preceding page) because we expect to lose money on a man the first year and are happy if they begin to produce the second year.

"If, at the end of six months, the spark is missing in the man, we admit our mistake and the man is let go, and we go to work selecting a new trainee.

"Keeping the men informed on inventory and availability of equipment is extremely important. A used equipment list or a complete correction sheet is issued each week. Our list gives a complete description of the equipment, and leaves nothing to guesswork.

"In order to keep our salesmen up-to-date on our advertising program their names and home addresses are placed on our mailing list and they receive our mailings at the same time the customers do.

"Our price lists are brief and all-inclusive and simplified for our own use. Our service policy is written in detail and each salesman carries a copy—it makes a good selling tool.

Sell to Users Only

"Whom do we sell? We sell users only—we do not sell to organizations in our immediate territory who resell. That is a strong policy point but if you start selling to everyone who wants to buy for resale you undermine the man we have been talking about, and in the long run lose control of your territory.

"We feel that we should control the sale and installation of our lines of equipment in our area, and since it costs our company the same price to install a job for the A.B.C. Ice Cream Co., the X.Y.Z. Dairy Co., or Mr. Jones the market operator, we believe that Mr. Jones is entitled to the same price as the ice cream or dairy company, because we assume the same responsibility and perform the same function in each instance.

No 'Bird Dog' Fees

"We pay no 'bird dog' fees, and we will not add to the cost of quotation in order to pay off for an assist to the job.

"Some of these policy points appeared difficult to live up to at first, and it costs us a lot of busi-

ness, but we believe that over a period of time we are ahead of the game because we have been able to build a sales force of professional salesmen who are able to operate almost independently on all types of jobs.

"We use no printed competitive product information because we find it more injurious than beneficial. The reliance on one bit of misinformation will do more harm than all the correct information can help, and it tends to magnify competitive equipment. It leads to arguments and by winning the argument, many an order is lost.

Factory Visits Valuable

"We take advantage of all possible factory visitation and all factory demonstrations because they make lasting impressions on our men.

"What all of this boils down to is that the modern professional salesman does not sell porcelain and steel, but he now sells the benefits that such porcelain and steel give to the buyer in the form of convenience, labor saving, improved merchandising, and, most important, profit.

"There was a time not so long ago that to be a salesman of refrigeration equipment was about the end of the line for a salesman, but today, the professional refrigeration equipment salesman has risen to the top of the ladder of salesmanship, and I for one am proud to be a salesman and a sales manager in our industry.

Walton Is Schmidt Manager In Ohio-Indiana District

CINCINNATI—The C. Schmidt Co.'s appointment of E. H. Walton as district manager for Ohio and Indiana has been announced by Paul R. Stewart, sales manager.

Walton has been associated with the refrigeration industry for the past 16 years, with most of his time spent in dealer activities, handling sales direct to the retailer. He will work with dealers and food merchants.



E. H. Walton

Store Layout Service Offered In Bally Program

BALLY, Pa.—A program to help neighborhood food markets and grocery stores modernize their stores was launched recently by the Bally Case & Cooler Co. here.

The plan, which consists of simple, packaged sales aids, was developed for the company's franchised dealers and distributors. The main objective is to help them render more complete service to their customers, reports Bally Sales Manager, Leon Prince.

Another objective of the program is to help the small food store, with its limited resources, keep pace with the chain store supermarkets and large independent food markets in store layout.

To get the best results from food merchandising, Bally tells its dealers, both the large and small store need to consider the present popularity of self service. This means that in laying out a store floor plan, emphasis should be placed on displaying food within immediate sight and easy reach.

The mechanics of the store layout service plan are quite simple, Prince reports. The dealer, using reduced scale graph sheets, indicates all important dimensions and locations in his customer's store. Then this rough sketch is sent to Bally's store layout division.

After studying the space problems involved, and noting the loca-

tion and size of all departments, the specialized store layout engineer at Bally makes a preliminary sketch of the proposed store layout. This is examined to eliminate any possible flaw, and then the final drawing is prepared.

The plan is reported to be fast and simple enough for any layman in the store fixture business to carry out. It is said to require only a basic understanding of food merchandising, and good common sense.

Stressing the importance of store layout service to the food retailer, Bally points out that two thirds of all the refrigerated cases it manufactures are bought for stores in the process of enlarging and modernizing for maximum self service.

Blasco Named Distributor for Kelvinator Condensing Units

DETROIT—The Peter Blasco Co., Bronx, N. Y., is the latest to become a distributor of Kelvinator condensing units under the company's new commercial wholesaler program, H. C. Patterson, commercial sales manager, announced recently.

Under the plan, selected wholesalers receive Kelvinator commercial condensing units direct from the factory, according to Patterson. Previously, such units had been sold exclusively by Kelvinator's appliance distributors and zone offices.



Cop Goes to the Cooler

ONE WAY to beat the heat and please customers in warm, sunny Georgia is to have cool drinking water in ample supply. Gardelle's Drugs in Augusta has had the problem solved for the past five years. Their Oasis water cooler, with glass filler and side-mounted fountain, pulls in traffic and customers all day long, according to J. L. Stewart, manager. Pictured here is Patrolman James L. Cahran who occasionally leaves his traffic post to get a cool drink.

Sherer Gives Specs on No-Glass Front Cases

MARSHALL, Mich. — Sherer-Gillett Co. has announced a series of four-color catalog pages containing specifications on its new line of no-glass front refrigerated display self-serve cases.

New Carton Coding for DETROIT Expansion Valves

To help you identify and select thermostatic expansion valves quickly, DETROIT cartons are now coded to show all important information at a glance. The relative position of these code designations is always the same—the sequence never changes.



1 CATALOG NUMBER
673, 777, 573, etc.

2 REFRIGERANT
F-12 Freon-12
F-22 Freon-22
M Methyl Chloride
S Sulphur Dioxide

3 APPLICATION
L Low Temperature
M Medium Temperature
H High Temperature

4 CHARGE
G Gas Charge
L Liquid Charge
C "C" Charge (Down to 0°)
Z "Z" Charge (Below 0°)

6 FEATURE
E External Equalizer
PL Pressure Limit

5 CAPACITY
Nominal Rating in Tons

Unit number for ordering purposes is always in the lower right hand corner of the label. Carton labels will continue to be color coded according to standard industry practice:

Yellow—Freon-12 Red—Methyl
Green—Freon-22 Blue—Sulphur

DETROIT CONTROLS CORPORATION
5900 TRUMBULL AVE. • DETROIT 8, MICHIGAN
Division of AMERICAN RADIATOR & STANDARD SANITARY Corporation

Serving home and industry:
AMERICAN STANDARD • AMERICAN BLOWER • CHURCH SEATS & WALL TILE • DETROIT CONTROLS • KEWAUNEE BOILERS • ROSS EXCHANGERS • SUNBEAM AIR CONDITIONERS

When It Comes to Carbonators . . . WHAT'S BEST FOR YOUR CUSTOMERS IS DYNAMITE FOR YOUR SALES!

THAT'S THE SUPERCHARGER CARBONATOR

BY CARBONIC DISPENSER

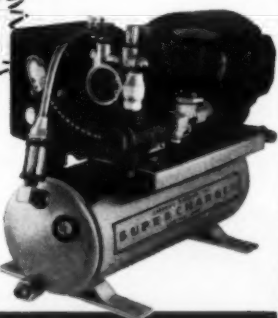
INCORPORATING THESE SUPERIOR FEATURES

1. Patented jet foamscent method produces highest degree of carbonation possible—93% to 100%. U. S. Patent #2,588,677.
2. Minimum number of moving parts, plus "Pump Sentinel," Carbonic Dispenser's exclusive fool-proof pump protection device, is users' insurance against costly repair bills.
3. Midget size—16"x13 1/2"x9 1/2". Giant Capacity—100 gallons per hour.

THE PREFERRED CARBONATOR—FROM NEIGHBORHOOD TAVERNS TO THE NATION'S FAMOUS COCKTAIL LOUNGES, FROM DRUGSTORES TO MAJOR LEAGUE BALLPARKS.

MAIL THIS COUPON TODAY
For literature outlining the opportunity now open to make bigger profits selling Carbonic Dispenser Equipment.

Name _____
Address _____
City _____ State _____



General Offices: Canfield, Ohio
Branch Offices:
1851 Randolph St., Los Angeles, Calif.
IN CANADA: GENERAL EQUIPMENT CORP., LTD., TORONTO, ONT.

SHOWN SIGNING the franchise with the Worthington Corp. is James A. Walsh, president, seated and left to right M. M. Lawler, vice president in charge of Air Conditioning, Worthington Corp.; W. F. Bishop, Worthington distribution manager; and James W. Derr, vice president of J. A. Walsh & Co.



J. A. Walsh & Co. Will Distribute Worthington Line In Houston Area

HOUSTON, Texas—James A. Walsh, president of J. A. Walsh and Co., Houston area distributor of RCA Victor television, radios, and RCA Appliances, Whirlpool home laundry equipment, Manitowoc refrigerators and freezers, and Modernfold doors, has recently announced the addition of the Worthington line of air conditioning and heating equipment.

The Worthington line to be handled by Walsh includes packaged self-contained units, condensing units, year-round residential units, and boilers and unit heaters, according to the announcement.

Goodrich Plant Cafeteria Gets New Cooling System

AKRON, Ohio—A new air conditioning system is a major phase of a \$120,000 remodeling and improvement program in the employees' cafeteria at the B. F. Goodrich plant here.

The air conditioning installation, handled by the Avery Engineering Co. of Cleveland, is concealed below lowered ceilings.

Windows in the cafeteria have been sealed, eliminating dust and dirt from manufacturing plants. Air coming in through the ducts passes through the main cafeteria room and out exhaust units in the kitchen.

The system insures that the dining area does not get hot air or cooking odors from the kitchen.

Van Dyke Starts Firm In Savannah, Georgia

SAVANNAH, Ga.—Atlantic Heating & Air Conditioning Co. has opened for business at 2505 Bull St., specializing in sales, installation, and servicing of air conditioning, refrigeration, and heating equipment of all kinds, both domestic and industrial.

J. A. Van Dyke, co-owner of the new enterprise, has been active in the air conditioning, refrigeration, and heating business here for many years.

For the past seven years his work included estimating, installation, and servicing of air conditioning, refrigeration, and heating equipment.

He was also an instructor of a class in air conditioning, refrigeration, and heating at the Savannah Vocational school.

Trane Assigns Weiske To Research Lab Post

LA CROSSE, Wis.—Robert G. Weiske has been appointed as an engineer in The Trane Co.'s new research and testing laboratories.

Before receiving his bachelor's degree in mechanical engineering at the University of Wisconsin, Weiske spent one and one half years in the U. S. Navy as a radio-technician. Previous to joining Trane, he was employed by Carnation Co. in a production and supervisory capacity.



Carrier Conditioner Has Air-Cooled Condenser That Can Be Installed on Roof



NEW Carrier Corp. 1955 self-contained Weathermaker air conditioners in sizes from 2 to 7½ hp. are equipped with air-cooled refrigeration. The compact air-cooled condenser (right) can be installed on roofs, building setbacks, or in a small service closet.

The air conditioning unit (left) can be placed directly in the space to be conditioned or in a utility room with ducts running to the space. The Weathermaker and condenser are connected by copper tubing which carries the refrigerant.

Mitchell Names Davidson Head of Eastern District

CHICAGO—Appointment of J. H. Davidson as district manager of the New York, New Jersey, and Connecticut area for Mitchell Mfg. Co. has been announced by Bernard A. Mitchell, president.

Davidson will be in charge of sales of the Mitchell room air conditioner, dehumidifier, and high-fidelity record reproducer.

He recently resigned as eastern sales manager for C.B.S. Columbia. He previously had wide experience in the appliance industry.



J. H. Davidson

Observer-Participant Exhibit Sponsored By Worthington Corp.

NEW YORK CITY—A new type observer-participant educational exhibit sponsored by an industrial machinery manufacturer was opened recently by Worthington Corp.

The permanent exhibit, located at 99 Park Ave., New York, illustrates basic operating principles of machinery related to business, industrial, community, and home life.

By operating the displays himself, the visitor gains an understanding of various machines and how they are used.

Among the displays is an exhibit showing how air conditioning works; and a three-dimensional composite of community life where factories, railroads, office buildings, and homes are all represented.

New Miami Firm Named Distributor for Airtemp

MIAMI, Fla.—Appointment of Allied Supply Co. here as distributor for Chrysler's Airtemp Div. in Dade, Broward, Monroe, and Palm Beach counties has been announced by W. L. Regan, district manager here.

Allied Supply is a new firm organized by Marshall H. Berkson and Thomas Gerald, who have operated Miami Air Conditioning Co. since 1949. Berkson will manage the new wholesale distributorship, while Gerald continues in charge of Miami Air Conditioning.

Chrysler Airtemp dealers in the four counties were guests of Allied Supply recently in the Miami Colonial hotel for a premiere showing of 1955 models.

GENUINE JOE SAYS:

BE SURE TO GET WAGNER'S NEW ELECTRICAL SERVICE CATALOG MU-40



Send for your free copy today!

WAGNER ELECTRIC CORPORATION 5471 PLYMOUTH AVE., ST. LOUIS 14, MO.

20-Year Guarantee!

ON THE WETTED DECK SURFACE



HALSTEAD & MITCHELL COOLING TOWERS

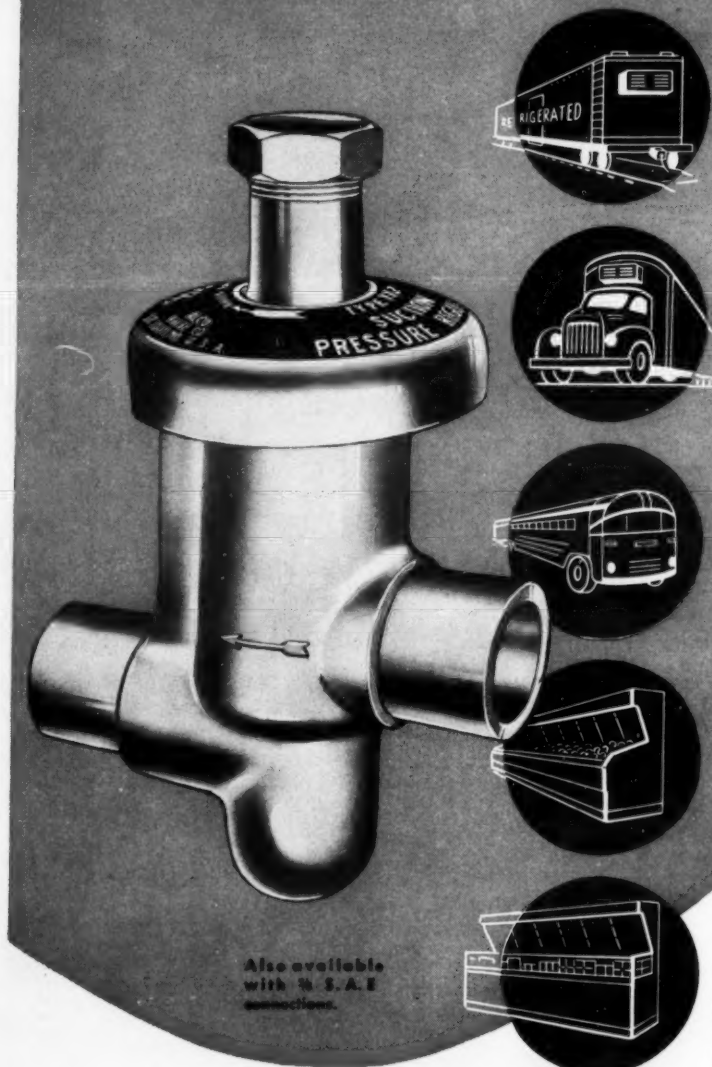
2 to 100 tons

"Built like a Battleship"—economical, lastworthy. Pressure-treated wood in wetted deck surface guarantees against rotting or fungi growth. Stainless steel fan and shaft, plus individual cabinet coatings of Vinsynite, Vinyl Aluminum and chlorinated rubber, add important years of life.

Wholesalers in Principal Cities

Halstead & Mitchell

BESSEMER BLDG., PITTSBURGH 22, PA.



be kind to the motor!

ALCO

SUCTION PRESSURE REGULATORS TYPES 771-772

KEEP IT COOL

Also available with 3/8 S.A.E. connections.

We have prepared for you Bulletin 186 with detailed information and will be glad to send it to you...FREE.

SEE YOUR ALCO WHOLESALE



Designers and Manufacturers of Thermostatic Expansion Valves; Evaporator Pressure Regulators; Solenoid Valves; Float Valves; Float Switches.

ALCO VALVE CO.

853 KINGSLAND AVE. • ST. LOUIS 5, MO.

They reduce the suction pressure in the compressor and keep it at a safe level. ALCO 771, installed in the suction line, prevents burn-outs and adds years to the life of any motor (electric or gasoline) where overload may be caused by:

- high starting loads
- surges in suction pressure due to load change
- high suction pressure caused by hot gas defrost
- low voltage and high pressures

\$4 Million New York State Building Gets 'Conduit Weathermaster System' With Cooling Capacity of 600 Tons

SYRACUSE, N. Y.—The air conditioning equipment contract for the new \$4,000,000 State Office building here has been signed with Carrier Corp., it was announced recently by Charles V. Fenn, vice president of Carrier's Machinery and Systems Div.

The modern eight-story building currently under construction in the block just east of the Syracuse City Hall is expected to be ready for occupancy Sept. 1, 1956. It will contain 125,000 sq. ft. of useable office space providing centralization of state agencies and bureaus, now at various locations in Syracuse and vicinity.

According to Cornealius J. White, architect for the State of New York, the new structure is only the second New York State office building to include air conditioning at the time of construction. The first was the New York State Insurance Fund building, also air conditioned by Carrier.

TO SUPPLY 600 TONS OF COOLING

The system to be installed in the State Office building is Carrier's "Conduit Weathermaster System." It will provide 600 tons of cooling capacity.

The main building of the 135-ft.-tall steel and concrete structure, finished with grey limestone around the first floor, will face onto East Washington St., White said. An 80-ft.-long entrance wing the full height of the building will form the stem of an abbreviated "T." If additional office space is required in the future, provision has been made for construction of a similar wing on the opposite side.

To take advantage of the many benefits of air conditioning, the building has been specifically designed for and around it, White stated.

For example, the central part of the building will be rectangular in shape, affording natural light. In addition, the narrowest ends face east and west in order to place a minimum of the structure's surface in the direct rays of the sun, thus sharply reducing the over-all heat load which must be offset by

the air conditioning.

Heat absorbent glass further reduces possible solar heat gain by as much as 15% over ordinary glass, it was stated.

The single Carrier system provides four-season control of temperature and humidity. Each of 578 individual room units is equipped with a control enabling occupants to "dial" their own temperature.

Approximately 95% of the water used in the condensing coils of the refrigeration system will be saved by installation of a roof-top cooling tower.

Chilled water for cooling will be supplied by two Carrier centrifugal refrigerating machines located in the basement.

COMMON PIPING SYSTEM

A common piping system will supply the Weathermaster system and 10 air handling units serving the interior zones with either chilled or warm water for both summer and winter air conditioning.

"Three central air stations located in one penthouse on the roof will supply conditioned air to the Weathermaster units furred into the wall underneath windows so as to take up no useable space," Carrier said.

"A mixture of outside and inside air will be conditioned by eight central system Weathermaster air conditioning units for serving interior areas away from the outside walls. One unit will be located on each floor next to the elevator shafts. The spacious hearing aid room on the first floor and the courtroom on the eighth floor will be individually served by two more of these units.

"All air will be distributed at high velocities through small, space-saving ducts and conduit risers fitting neatly alongside the steel girders in the outside wall space."

White performed all architectural and consulting engineering work on the new building. General contractor is F. D. Rich of Stamford, Conn. Kenneth A. Taylor, Inc., of Syracuse is mechanical contractor.

Austin Motel Project Includes Conditioning

AUSTIN, Texas—Work has been started on a \$200,000 remodeling and enlargement of the Austin Motel at 1220 South Street Ave.

The entire project will be air conditioned and heated for year-round use. Refrigerated water circulation will be used for the air conditioning.

Plans include a new cafe with private dining room, a television lounge, recreation room, and an office at the front of the building. Two one-story stores now on the site north of the present motel will be topped with motel apartments, some of them two-room suites with individual dressing rooms. On the west side of the motel area will be a group of single-room tourist quarters.

New Hotel for Savannah

SAVANNAH, Ga.—An 18-story combination hotel and office building will be erected by Louis Schleifer, New York hotel magnate, on the old Pulaski hotel site at the corner of Bull and Bryan Sts.

Schleifer said the structure will be air conditioned, with the hotel part containing 250 rooms. He added that plans call for ground-floor stores and offices on the first and second floors, with the remaining floors making up the hotel.



Swank Golden Gate Motel Installs 89 General Electric Packaged Heat Pumps

MIAMI BEACH, Fla.—What is said to be the largest installation of packaged heat pumps in the world was introduced here recently as the swank Golden Gate motel-hotel project opened its doors at a gala weekend celebration.

Eighty-nine General Electric "Weathertrons" heat and cool 500 of the project's 650 rooms. The 89 units are used in the motel section of the project and total 357 hp. All units are located against outside walls of individual equipment rooms for easy access to outside air.

Mechanical Contractors Supply, Inc., Weathertron distributor of Winter Park, Fla., made the installation of 44 3-hp. units and 45 5-hp. units.

The Golden Gate resort is a 20-acre tract stretching from the Atlantic Ocean to upper Biscayne Bay. It includes a 150-room hotel on the ocean and a bay colony with villas, apartments, and cottages for motoring tourists, plus shop-

ping, bar, medical, and dental facilities.

The ocean and bay sections of the resort are connected by a tunnel under Collins Ave., famous Miami Beach resort street.

Heat pumps in multiple installation are proving particularly adaptable for motels because they switch from heating to cooling automatically, are easy to install and maintain, and because individual units can be turned off when the motel is partially occupied, according to General Electric.

Guests at the weekend celebration included Washington and United Nations dignitaries flown to Miami Beach in a specially chartered plane.

G-E personnel in attendance included Claude Hendon, commercial vice president of the southeastern district; H. W. Williamson, marketing manager of the Weathertron Dept.; and R. W. Tribble, who is Weathertron sales representative.

**SAVE
\$867⁵⁴**

**ON 60 HP
AIR CONDITIONING
INSTALLATIONS!**

HERE'S HOW!

Use this Part Winding Motor Starter on Your Reduced Voltage Starting Jobs...

This part winding motor starter can be used with most standard 220/440 volt, Y connected motors, when used at 220 volts.* It costs only 1/3 to 1/2 as much as the least expensive (primary resistor) starter, depending on horsepower. Yet, its starting torque is essentially the same and the starting current is actually lower.

*Part winding starters arranged for 440 volts are also available

Write for Bulletin SM-251

Address Square D Company, 4041 North Richards Street, Milwaukee 12, Wisconsin

ASK YOUR ELECTRICAL DISTRIBUTOR FOR SQUARE D PRODUCTS

SQUARE D COMPANY



American Blower Opens Ore., Ind. Branch Offices

DETROIT — American Blower Corp. has announced the opening of direct factory branch offices at Portland, Ore. and Fort Wayne, Ind.

W. S. Cooper will manage the Portland office, located in the Pittock Block, 921 S.W. Washington

St. He is a graduate of Purdue university in mechanical engineering and was transferred from American Blower's office at Charlotte, N. C.

J. W. Johnson was made manager of the Fort Wayne office, located at 517 Gettle building. The new office will serve the northeastern section of Indiana. Johnson is a mechanical engineering graduate of Purdue university and was formerly a sales engineer at the company's South Bend office.

Requests Rolling In for 'Dust-Stop' Filter Display

TOLEDO—A record number of requests for "Jiminy Filter Dust-Stop" window displays have been received by Owens-Corning Fiberglas Corp., it has been announced by R. C. Brower, manager of filter distributor sales.

Owens-Corning, manufacturer of Fiberglas Dust-Stop air filters for both forced air furnaces and air conditioning units, announced the availability of the display early this fall.

The offer includes a counter window display, a window banner and decal, and a cut-out of Jiminy Filter, a new cartoon character appearing in Owens-Corning Fiberglas Corp.'s national magazine and television advertising. The displays are still available and can be obtained by writing Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

Redmond
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in the world!

FACTORY DISTRIBUTORS
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mometers for all services.
MARSH-ELECTRIMATIC, Water Regu-
lating Valves, Solenoid Valves.

MARSH INSTRUMENT COMPANY
Sales Affiliate of J. P. Marsh Corporation
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AIR CONDITIONING & REFRIGERATION NEWS

Trade Mark registered U. S. Patent Office; Est. 1926.

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Wrong Way to Advertise Air Conditioning

Never—in more than 25 years of experience in reporting, editing, and publishing a business paper—have we found an industry so confused as we did late last summer.

Obviously, we refer to the air conditioning industry *in toto*.

A year ago it appeared that nothing could stop the air conditioning industry from rising to ever-increasing heights. Dealers and contractors couldn't get enough units from manufacturers to meet the demand. New suppliers were entering the business in droves. National magazines devoted pages of publicity to this Rising Star of Commerce.

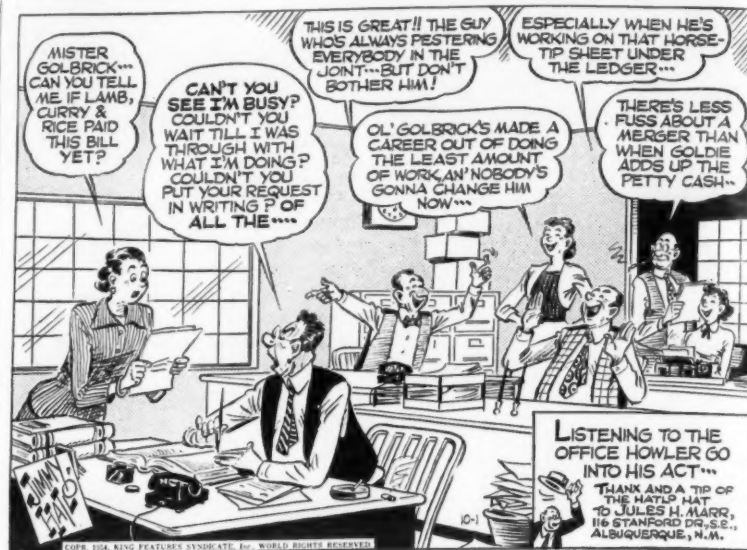
And dozens of trade papers added those magic words, "air conditioning," to their mastheads. *Tinsmithing* and *Tool Forgetting* became *Air Conditioning & Tool Forgetting*, and so on. Any day we expect to see a trade monthly entitled: *Girdles, Brassieres, and Air Conditioning*.

As a result, too many organizations of all kinds got into the act. No wonder 1954 was the Year of Confusion for the air conditioning industry, and the Year of Horrible Carry-over Inventories.

In an attempt to learn what should be done in the future to get this promising business back on the main track, AIR CONDITIONING & REFRIGERATION NEWS sent expert reporters to key markets. There they interviewed *everybody* connected with air conditioning.

From reading their reports you get at least one clear idea, to wit: *Air Conditioning is a LOCAL business*. An amazingly few dealers and contractors, in oddly scattered cities, get the bulk of the sales. Immense portions of the United States appear to be immune to air conditioning. (Put another way: few dealers in

They'll Do It Every Time Jimmy Hatlo



most cities, counties, and states have put their hearts and purses into selling it.)

Now, belatedly, we can get down to cases on the topic of this editorial: How NOT to Advertise Any Air Conditioning Product.

It should be obvious that tremendously expensive national magazine and TV advertising is a conspicuous waste of money. Why? Because millions upon millions of subscribers and televiewers never will be approached by an air conditioning salesman—nor will they be able to find an air conditioning purveyor if that advertising "gets them in the mood."

During the Spring of '54 several issues of *Life* and the *Saturday Evening Post* were dominated by window-cooler ads. What happened? More than one third of the window-unit air conditioners produced this year still are in expensive storage. Lest we be sued, we hasten to add that this situation isn't the fault of national magazines like the *Post* and *Life*, which have proven over and over again that they can sell profitably for advertisers.

The fault lies in a false assumption on the part of over-optimistic manufacturers. What is that False Assumption? Bravadolefully we answer: Air conditioning is not yet a "consumer demand item," nor is it yet distributed adequately on a National Scale.

Incidentally, successful air conditioning dealers and contractors interviewed by our crack reporters reveal that:

- (1) Most useful air conditioning advertising is that placed in local newspapers and on "spot radio."
- (2) Television commercials—even local—haven't produced up to expectations. Viewers can't feel cool comfort over TV. But they can imagine its benefits when smartly extolled via radio and newspaper ads.

LOCAL promotion, backing up dealers who try—in susceptible markets—would appear to be the answer.



The O. B. Lund Co.
Havre, Montana

Editor:

I perused with great interest the article on page 2 in your Nov. 15 issue. This article had to do with some of the conversation which came to light during the annual meeting of the Air Conditioning & Refrigeration Wholesalers Organization, held a short time ago, in St. Louis.

As an independent refrigeration and air conditioning contractor, I was particularly impressed by the "Number One Beef" of the wholesalers. Possibly they should keep in mind that the number one headache of the contractors is direct selling by the servicemen. The contractor who has a substantial investment in equipment, parts, trucks, and perhaps a building, is rapidly finding himself in a position where he is forced to buy direct from the manufacturer because the wholesaler is selling direct to the end user. I think that a little research will indicate that the condition I have indicated exists pretty much throughout the whole country.

The curb-stoner who has the neighborhood tavern as his cus-

tommer is not injured by this practice. But the substantial accounts, grocery chains, wholesale grocers, building contractors, etc. which are the accounts which keep us in business, are buying direct from the wholesaler with his complete approval and encouragement.

I have wanted to get this off of my chest for some time, and I rather doubt that any part of it will appear in THE NEWS. In any event, that is the situation as I see it.

O. B. LUND

Carrier Corp.
Syracuse, N. Y.

Editor:

Just thought I would drop you a note to tell you how much I enjoyed your very informative article in the Nov. 8 issue—subject, "What Happened In Residential Air Conditioning In '54 In Ft. Worth."

Some of your facts and figures are very interesting and significant to us.

Congratulations on your usual job of good reporting. I will be able to use your figures for several purposes.

WILLIAM A. LAKE



WRITE NOW
FOR
BULLETIN U-20

ONE UNICON
serves up to 16 compressors
WITHOUT A DROP
OF WATER*

*UNICON is a Remote-Type Air-Cooled Condenser

KRAMER TRENTON CO. • Trenton 5, N.J.

Service & Supplies

DISCUSSION of the proper methods of installation of Fiberglas cold storage insulations is conducted by Kenneth Groshon, left, of the McCormick Asbestos Co., Baltimore, and A. W. Cox, right, manager of low temperature insulation sales of Owens-Corning Fiberglas Corp. In the background is a replica of a cold storage room, constructed to illustrate approved methods of installation. Right, Asphalt-Enclosed Board is applied with cold mastic and to the left, Pre-formed Insulation is installed by the dry wall method developed by Owens-Corning. The meeting was sponsored by Owens-Corning for its eastern cold storage independent contractors and held in the Sheraton-Belvedere hotel in Baltimore.



Owens-Corning Cold Storage Clinic Demonstrates Construction Methods

TOLEDO—An unusual cold storage clinic sponsored by Owens-Corning Fiberglas Corp. recently in Baltimore, Md. was so well received by distributor-applicators attending that the company is contemplating holding others throughout the country.

As the two-day clinic progressed, cold storage technician-workmen installed "Fiberglas" cold storage installations by various accepted methods in full view of the audience. Questions were answered as the work continued.

A. W. Cox, Fiberglas manager of low temperature insulation sales, said the purpose of the meeting was to "provide helpful information for the benefit of independent Fiberglas contractors."

Illustrated in a replica of a cold storage room constructed for the meeting was installation of "Asphalt-Enclosed Board" against a masonry wall, in T-iron ceilings with an asphalt mastic finish, in self-sustaining partitions, against wood walls and ceilings and in metal pan ceilings. Asphalt-Enclosed Floor Board was shown in floor construction.

The dry wall construction method developed by Owens-Corning was demonstrated with PF insulation against masonry between treated studs and against walls and ceilings with metal clips.

Other subjects covered were: hot erection asphalts; asphalt priming paints, emulsion, mastic finish; vapor barrier papers and foils; studs and metal clips; interior finishes; and equipment.

Contractors participating in the program were: Irving McCormick, Kenneth Groshon, and Ray Anderson of McCormick Asbestos Co., Baltimore; Harold Knudsen, Knud-

sen Co., Syracuse; Lawrence Youtzy of Rochester Industrial Insulations, Inc., Rochester; L. E. Fisher of the H. S. Chaffee Co., Buffalo; Albert Wynot of the A. F. Underhill Corp., East Cambridge, Mass.; R. F. McCormick and Elmer Johnson of George V. Hamilton Co., Pittsburgh; Walter Shipe, Asbestos Covering & Roofing Co., Washington; and C. R. Anderson, The Eckel Corp., Cambridge, Mass.

Clarence Esbenshade of Warren Ehret Co., Philadelphia; Edward Ratcliffe of the Culp Industrial Insulation Co., Kingston, Pa.; Bart Lyteel of Woolstate Corp., East Orange, N. J.; and Ralph R. Bailey of The Bailey Refrigeration Co., Inc., Brooklyn.

Owens-Corning sales managers and cold storage specialists from the company's general offices and seven northeastern branch offices participated. Murray Owen, Baltimore manager, acted as host.

Wolverine Tube Mill Depot Opened In Charlotte, N.C.

CHARLOTTE, N. C.—A new mill depot has been opened to serve the customers of Wolverine Tube, Div. of Calumet & Hecla, Inc., in this area.

The depot will stock Wolverine refrigeration tube, seamless non-ferrous water tube, automotive tube, and S.P.S. pipe.

Establishment of this new facility will increase speed of shipment and effective service to Wolverine Tube customers in the eastern district, the company said. Wolverine expects to make almost every shipment within 24 hours after an order is received.

G. W. Overstreet, Wolverine sales representative, will coordinate the operations through Wolverine's Charlotte office.

Dayton RSES Hears Kaminsky

DAYTON—Aaron R. Kaminsky, Bush sales engineer, was guest speaker at the October meeting of the Dayton, Ohio chapter of RSES. Discussion centered on new product developments in the Bush and Heat-X lines.

Penn Controls Names Bowen and Kase to District Office Posts

GOSHEN, Ind.—R. H. Luscombe, general sales manager of Penn Controls, Inc., has announced the appointments of William F. Bowen as district office manager for the St. Louis territory and William



W. F. Bowen

Kase as sales engineer for the North Bergen, N. J. district office.

Bowen replaces R. L. Persons, who resigned from the Penn organization. Prior to joining Penn, Bowen served as sales engineer for White-Rodgers Electric Co., regional sales director, Heating Div., Fairbanks Morse Co., and more recently sales representative for Morrison Steel Products.

In his new post Kase will work with George Sander, Penn's district manager of the North Bergen territory and Robert Eichman, sales engineer. The addition of Kase will enable Penn to broaden



William Kase

and provide even better service to the large North Bergen market area for automatic controls, the company said. Kase served as sales engineer for General Controls in the Long Island City, N. Y. area prior to joining Penn.

Ice Machine Div. Names Bonhtal Service Manager

ALBERT LEA, Minn.—Appointment of Laurence J. Bonhtal as service manager of the Ice Machine Div. of American Gas Machine Co. here has been announced by R. J. Lickteig, the firm's sales manager.

Bonhtal will be responsible for setting up and directing the company's newly-formed service departments, Lickteig said. He was formerly assistant service manager and application engineer of Remington Corp.

American Gas Machine is a national manufacturer of commercial refrigeration equipment.



L. J. Bonhtal

Heads Heigel & Long Sales

TOLEDO—Joseph L. O'Connor has been appointed sales manager of Heigel & Long, Inc., heating and air conditioning firm, to supervise an expanded sales staff and head promotion and advertising.

Russell E. Davis Moves To So. California as Dean Representative

BROOKLYN—Dean Products, Inc. announced recently that Russell E. Davis, who formerly represented the company in the St. Louis territory, has moved to the southern California territory, with headquarters at 4305 Woodland Ave., Burbank, Calif., where he will continue to represent Dean Products.

Davis, who has been with Dean Products since 1947, on both Dean "Cold Plate Coils" and Dean "Thermo-Panels," was formerly associated with Hussmann Refrigerator Co. for two years as field service manager, subsequently as research and development engineer responsible for design and test of various fixtures and condensing units.

Prior to that time he was owner of Service Engineering Co., contractor for installation of refrigeration and air conditioning equipment.

Rebmann, Gay Open Office

ST. LOUIS—Charles P. Rebmann and Clarence E. Gay have opened a new engineering firm in the Norwest Bank building, 1502 St. Louis Ave., to specialize in designing air conditioning, heating, plumbing, and electrical systems.



the small **SOLENOID VALVE**
with the ***BIG ADVANTAGES**

- * widest range of uses
- * low cost
- * easier, faster servicing



Unconditionally
guaranteed
for 18 months!

Been looking for a small solenoid valve at low cost, suitable for various kinds of applications and easily serviced? If so, J-E Type 2 Solenoid Valves are your answer.

Check these advantages

- Usable for Air, Water, Light Oils, Freon 12 or 22 and other non-corrosive fluids.
- Choice of 1/4" or 3/8" female pipe—3/8" or 1/2" sweat—1/4" or 3/8" SAE male flare connections.
- Operate smoothly and dependably on inlet pressures from 1 to 250 P.S.I. at temperatures up to 225° F.
- Valve Body need not be removed from line for servicing. Simple come-apart construction allows easy inspection or replacement of all internal parts.
- Synthetic rubber diaphragm guarantees "bubble tight" seating. Unaffected by reverse flow.
- Minimum temperature rise, even when continuously energized, assures cool coils and long life.
- For further information about your specific needs, call your wholesaler or write today.



—for lasting customer satisfaction

SOLENOID VALVES THAT SURPASS THEIR SPECIFICATIONS

JACKES-EVANS MANUFACTURING COMPANY

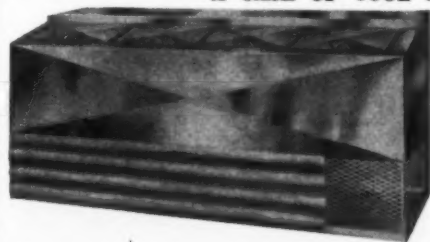
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**For All Your
Refrigeration and
Air Conditioning
Requirements**

Curtis Refrigerating Machine Division
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1912 Kienlan Ave. St. Louis 20, Mo.
Established 1854

"A CASE OF COOL JUDGMENT"



**FLO-COLD
DRINKMASTER
STAINLESS STEEL
CUBER—COOLER.**

SOLD THRU DEALERS ONLY.

WRITE

**United Frigugator Engrs.
MENOMINEE, MICH.**

AVAILABLE IN SIZES 4 TO 10 FT.

What's New

When requesting further information on new products, please use "Information Center" form.

Big Capacity In Small Space Feature of 'Super Cuber'

—KEY NO. D-1230—

ALBERT LEA, Minn.—Small space requirements and large production capacity are announced features of the "Scotsman Super Cuber" model SC-100 produced by American Gas Machine Co. located here.

Production of up to 1,800 solid, uniform size cubes or 110 lbs. of ice per day is possible, the manufacturer stated. The unit measures only 30 in. long by 24 in. wide and stands 39 in. high.

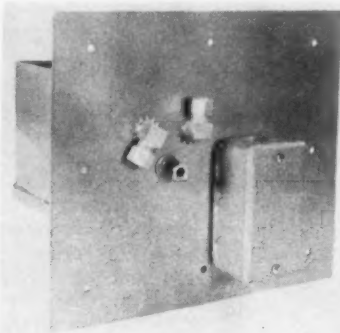
"Intended for use in restaurants, taverns, drugstores, or wherever space is limited, the Super Ice Cuber also eliminates any cleaning problems by using freezing water only once and flushing out any impurities after each cycle," the company said. "In addition, a waist-high, stainless steel storage bin makes ice handling easier and holds up to 75 lbs."

Installation of the unit—complete with hermetically-sealed $\frac{1}{3}$ -hp. refrigeration unit—is simple and inexpensive, according to the manufacturer, and requires only $\frac{1}{4}$ -in. water and $\frac{3}{4}$ -in. drain connections.



"Compact console design and handsome appearance permit location in or near area of greatest use and heavy insulation prevents melting or sticking cubes," it was stated.

The Scotsman Super Cuber model SC-100 weighs 300 lbs. uncrated—335 lbs. in crate—and its freezer unit carries a five-year warranty, according to the manufacturer.



Thermal Humidifier Uses Electric Heating Element

—KEY NO. D-1231—

CAMDEN, N. J.—A new thermal humidifier which teams up with the regular heating system to maintain a steady level of humidity has been developed by Flight Mfg. Corp. here.

Called the "H. D. 100," the thermal humidifier uses an electric heating element in its operation. It diffuses over 4 gals. of water in 24 hours in the form of vapor emanating at 200° F.

All metal parts in contact with water are of brass and copper, and are corrosion resistant. The unit's electric heating element is 600 watts, 115 volts, copper sheathed, and wired to a junction box—an integral part of the humidifier. An asbestos gasket is furnished for backing to the face plate.

The tank, made of 24 gauge brass, is 6 in. wide, 5 in. high, and 8 in. long. The face plate is 10 in. wide and 9 in. high, and is made of 22 gauge steel with two coats of phosphoric acid base primer and finished in a wide range of colored enamels with Dow Corning silicone resins.

Packed, the units weigh approximately 5 lbs.

Dehumidifier Claims Low Cost Operation

—KEY NO. D-1232—

MANSFIELD, Ohio—A new dehumidifier, model H-4A, has been introduced by Westinghouse Electric Corp. here, which features low cost operation and large moisture removing capacity.

The dehumidifier uses the Westinghouse air drying coil of bare copper and can remove 3 gals. of water from 10,000 cu. ft. of enclosed space every 24 hours.

Styled in Desert Gray, it is mounted on casters for easy mobility and has a built-in container to collect water. When the container is removed, a special drain trap swings into place to prevent water from dripping on the floor.

An automatic timer is available as an accessory to operate the unit automatically from 4 to 24 hours.

Suggested retail price for model H-4A is \$129.95.



"My Typhoon District Manager is always Johnny-on-the-spot," says Don Kissell (left), Typhoon Los Angeles dealer.

TO GET ON THE MOST PROFITABLE FACTORY-DEALER TEAM IN THE BUSINESS, TIE UP WITH

TYPHOON 505 Carroll St.,
AIR CONDITIONING Brooklyn 15, N. Y.

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• RESIDENTIAL YEAR-ROUND UNITS FOR GAS OR OIL
• ROOM AIR CONDITIONERS, $\frac{1}{2}$, $\frac{3}{4}$, 1 H.P.
• PACKAGED HEAT PUMPS, RESIDENTIAL & COMMERCIAL

3 New Models Featured In Acme Cooling Tower Line

—KEY NO. D-1233—

JACKSON, Mich.—New 2, 10, and 15-ton models are featured by Acme Industries, Inc. in its new "Flow-Cold" line of all-metal cooling towers for 1955.

"As with the intermediate models, blowers are employed in the new towers to achieve quiet, efficient operation—with or without ductwork," the company commented.

"The units can be installed indoors or outdoors. Heavy galvanized finish makes them rustproof and corrosion resistant and eliminates the need for painting or other surface maintenance. Blower and pump motors are weather protected.

"All three models are extremely compact. The 15-ton model measures slightly less than 6 ft. high and 5 ft. long by 31 in. wide, exclusive of the pump, which is optional equipment.

"The new 2-ton model, designed specifically for the residential market, is only 52 in. by 19½ in. by 17½ in. for corresponding dimensions.

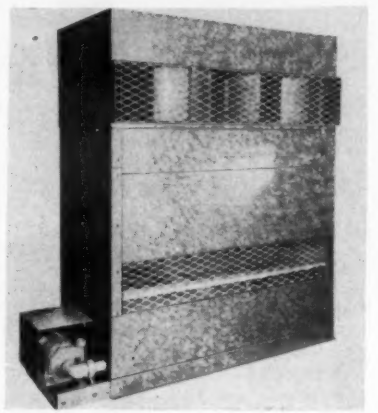
"Because of its compactness and quiet operation, it is ideally suited for installation in home basements or attached garages, as well as in outdoor locations, the company said.

"In areas with relatively low humidity (75° wet bulb or below) this tower will handle a 3-ton cooling load.

"Throughout the line, large cooling capacities in minimum tower sizes are achieved by Acme's wetted metal-deck principle of heat transfer and space-saving, all-metal construction," according to Acme.

The Z-shaped baffles of the exclusive "Acme Pak" are said to provide maximum diffusion of water droplets and a great amount of wetted metal surface in a small space.

Fast heat dissipation through evaporation and heat transfer to the air stream result, the company stated.



Other features include flush-type, anti-splash air inlets, as well as non-clogging, centrifugal-type spray nozzles, the manufacturer further stated.

Also included is an exclusive combination waste-drain-and-over-flow that is fool-proof and simplifies servicing, according to the manufacturer.

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48

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New, exclusive engineering developments are landing us big prestige jobs, such as this functionally superior home office for Hallmark Cards now under construction in Kansas City, Missouri.

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*Architect: Welton Becket and Associates, Los Angeles.
Air Conditioning Contractor: Interstate Heating and Plumbing, Kansas City.



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Water Conference Studies Methods of Handling Impurities That Damage Refrigeration Systems

Three Ways To Face Treatment Problem

PHILADELPHIA — "There appears to be good evidence that water difficulties exist on many refrigeration and air conditioning jobs," declared Ralph Westcott, Los Angeles consulting engineer and chairman of the Water Conference.

"A problem solution is only possible if all of the variables are accounted for and properly evaluated. Conditioned ignorance and preconceived ideas which are based on faulty analysis will not provide valid solutions. . . .

WATER DIFFICULT TO EVALUATE

"Water is a difficult commodity to evaluate because its quality can vary over such a wide range. It must first be recognized as the most universal solvent. Water chemistry, as it concerns our industry, relates to the impurities in water rather than the pure water. Pure water is easily made very corrosive by certain impurities in relatively small amounts. . . .

"With all of the natural and man-made variables to be considered, it is likely that Murphy's law is applicable. This law, in its simplest, fundamental form, states, 'If trouble can develop, it will. . . .

CONTRACTOR HAS CHOICE

"The contractor must also ultimately face the problem of what to do about water treatment," Westcott pointed out. "He has a number of possible choices. He can neglect water treatment and plead ignorance; he can learn how to apply water treatment, or he can make a recommendation for a qualified water treatment company to handle the problem.

"All of these choices have pitfalls," according to Westcott. "The first one is obvious; he'll always be in trouble on his jobs. The second choice certainly requires more than a superficial knowledge of water treatment for its success.

"The third choice still requires enough knowledge of water treatment to evaluate who is to be recommended to handle the problem. Lacking a sound basis for evaluation, he may easily get involved with magic gadgets and compounds. . . .

DEVICES BEING PROMOTED

"There has been an unprecedented promotion during the past year or two on devices to be used in place of chemical water treatment. Not only have the promoters been active but so have many investigators, attempting to find some legitimate basis for the promoters' claims.

"Many people seem to feel that the criticism leveled at the promoters is inspired solely because they have promoted so successfully and the critics are suffering competitors," Westcott said.

"Gadgets of one kind or another for use in water systems have come and gone for many years. Each new promotion follows the same old pattern. Some new form of energy has been discovered, generally in some foreign country where it has been 'successfully' used.

"This new energy, be it etherium, electronolitic, or simple catalysis is described in glowing pseudo-scientific lingo that has no actual scientific meaning. In general, the actual ingredients or method of manufacture are a big secret and are never divulged to a suspicious investigator.

"Again conditioned ignorance and self-delusion make possible testimonial letters from some users proclaiming all sorts of miraculous benefits. I think most of the people are interested in the facts. One big

Editor's Note: One of the highlights of the 50th annual meeting of the American Society of Refrigerating Engineers held in Philadelphia was the Water Conference, which ran all day.

Four of the several talks presented at this conference are to be published as separate stories. These are the contributions of John Engalitcheff, Jr., of Baltimore Air Coil Co.; H. W. Hottel of Harvey Hottel, Inc.; E. H. Hurst of National Aluminate Co.; and R. H. Savage of Water Chemists, Inc.

Presented in this report are summarized reports of some of the other talks given at the conference.

criticism has to do with the technical press, be they society publications or trade publications.

"I abhor any suggested regimented control of the press, but I feel strongly that technical publications have a moral responsibility to keep within the boundaries of facts, whether it be advertising, news reports, or technical articles. This does not preclude controversial subjects within the realm of reason," Westcott declared.

Manufacturer Should Assume Responsibility

"First responsibility of the equipment manufacturer is to search continually for better materials and techniques," declared J. E. Lancaster, chief engineer, Air Conditioning and Refrigeration Div., Worthington Corp.

"He must adapt developments to specific applications. He must also provide adequate testing of new materials and designs before offering them to the public.

"The manufacturer also has the primary responsibility of balancing corrosion resistance against first cost and cost of maintenance," Lancaster declared.

"We manufacturers must instruct our sales personnel, contractors, and users on the limitations of our equipment, and we must design the most serviceable equipment for the broadest variety of conditions at reasonable cost."

Can't Protect User Under All Conditions

"There is nothing that can be done to protect the user under all conditions," commented J. H. Koonce, technical services manager, Machinery & Systems Div., Carrier Corp.

"We at Carrier have been trying to educate the consulting engineer, the contractor, and the owner as to water problems and their solution.

"Water, especially when recirculated, can cause corrosion, scale, and algae.

"Our Atlanta man," Koonce declared, "says water is responsible for more service problems than any other one factor, including refrigerant leaks.

"The manufacturer can design for easy service. One problem is to design a standard bleed-off for the widest variety of conditions with minimum waste of water.

"Erosion is not a serious problem in most cases due to low velocities, but in areas where sand is a problem, this can be serious."

Start Water Treatment At Time of Installation

"A water treatment program should go into effect when the equipment is started up, not two years later," asserted Fred Hodgdon, until recently a water specialist with Carrier Corp. and now associated with Metropolitan Refining Co.

"Water is responsible for most of today's problems in air condi-

tioning and refrigeration," he declared.

"Many owners have felt that manufacturers paid too little attention to their problems," Hodgdon said.

"At Carrier I made a survey of 46 large installations which revealed that 14 of the 46 users had no water treatment at all, and another 24 had ineffective treatment. Some of the latter were using the wrong chemicals. Others had no control over the feed. And many had no provision for bleed-off.

"Only eight of the 46 had an adequate water conditioning program," Hodgdon emphasized, "and

32 of the 46 jobs were in serious trouble. Most of those 32 jobs would probably have been shut down in three or four years for major repairs.

"Feeding of water treatment chemicals must be done intelligently—continuously or intermittently under rigid control.

"Owners of equipment have little or no knowledge of the need and requirements for water treatment," Hodgdon stressed. "And up to now few consulting engineers have recognized the need for water treatment. Owners generally have shopped for price rather than quality, and as a result have received inadequate service."

Low Cost Method Needed For Small Jobs

"It appears to be a rare specification that carefully outlines water treatment," declared H. J. Prebensen, president, Air Comfort Corp., large Chicago contractor.

"The average specification merely specifies a feeding device but not continuous operation and service," he observed. "The best customer relations for us result when we assume a continuing responsibility.

"Chicago water is good, but in suburbs water from wells is often high in hardness.

"For everything except the largest jobs, the users can't afford the services of a water expert," Prebensen said. "There must be a

simple, low cost treatment for the thousands of small, self-contained air conditioners using small towers."

Cost Slows Acceptance Of Sound Methods

"Cost has slowed the acceptance of sound, professional water treatment and advice," admitted L. C. Bishop of Hall Laboratories, Inc.

"Most of the chemicals used today for water treatment are available to anyone who has the knowledge. The 'magic' lies in knowing how to apply them," he said.

"There has been a distinct failure to educate manufacturers, ourselves, engineers, and users on water treatment.

"There has been no planning for water treatment.

"There has been an apparent failure on the part of water treatment people to protect certain surfaces in air conditioning systems. We have committed ourselves sometimes to protect surfaces that water doesn't touch."

Bishop cautioned the user: "Don't buy service with chemicals."

Cool New Dallas Hospital

DALLAS—The Parkland Memorial hospital at 5201 Harry Hines Blvd. was officially dedicated recently. Air conditioning equipment in the new 588-bed hospital was installed by Texas Distributors, Inc.



NEWEST PRODUCT in the air conditioning field is Worthington's ultra-modern winter and summer home air conditioner. It's one compact package that heats, cools, circulates, filters and controls humidity. Get all the facts about this fast-selling

unit — and the rest of Worthington's full line of air conditioning and refrigeration equipment by writing to Worthington Corporation, Air Conditioning and Refrigeration Division, Section A-449, Harrison, New Jersey.

We made 1954's biggest air conditioning news!



NEWEST BUILDING in New York is the glass-sheathed Manufacturer's Trust Building. It's cooled by a Worthington central station system — so big it does the same job as melting 300 tons of ice daily.



NEW LIFE FOR OLD STORES. Shoppers stay longer, buy more in stores cooled by Worthington units with the new "Million Dollar" compressor. New 3-D circulation aims comfort right where it's wanted.



NEWEST FACTORY. New plant in Decatur, Alabama was built to meet the ever-increasing demand for Worthington packaged air conditioners. In 1954, more Worthington packaged units were sold than ever before.

WORTHINGTON



THE BEST FRANCHISE...THE MOST COMPLETE LINE

Sizing Water Pumps

Performance Should Be Measured In Gallons Per Minute Delivered
Against Discharge Pressure Measured In Feet

WICHITA, Kan.—Suggestions in sizing, selection, and use of water pumps were presented at the sixth annual convention here of the Mid-West RSES association by W. H. Plowman, representative of Goulds Pumps, Inc.

"Performance of a centrifugal pump," he explained, "is measured in gallons per minute delivered against a discharge pressure measured in feet. One pound of pressure is equivalent to 2.31 ft. of head, or 100 lbs. pressure is equal to 231 ft. of head."

"The head-capacity characteristics of a particular pump can be plotted on a chart or graph. This is called a 'characteristic' curve," Plowman said. "Fig. 1 shows a typical centrifugal pump curve. From this curve you can immediately tell how the pump will react to any change in the head or capacity condition."

"Note that with a reduction in head, the pump will immediately pump a greater capacity. Conversely, an increase in the head conditions will cause a reduction in the water delivered by the pump. This is very important. It is one of the reasons why the system begins to give trouble when the

pipings and condenser tubes scale up," he explained.

"All 1/2-hp. pumps are not the same; all 1-hp. pumps are not the same. Thus it is not safe to order a pump by motor size only," Plowman cautioned.

"Note the 1/2-hp. pump curve in Fig. 1. The normal rating for this pump is about 20 g.p.m. at 50-ft. head. Now note the 1-hp. pump curve in Fig. 2. The normal rating for this pump is about 40 g.p.m. at 32-ft. head. 'These are both 1/2-hp. pumps, but which one do you want? One of them will do your specific job, but if you receive the other one, you are in for nothing but trouble.'"

Another factor in sizing pumps is the size of the discharge connection, but all pumps having the same size discharge do not necessarily have the same capacity, Plowman emphasized.

"Fig. 1, which applies to a 1-in. pump, shows that the maximum capacity of this type pump is about 50 g.p.m., the maximum head is 115 ft., and the maximum horsepower required is 1 1/2."

"But other 1-in. pumps can have a maximum capacity of 120 g.p.m.,

a maximum head of 520 ft., and require a 25-hp. motor."

"Would you want your supplier to furnish this pump? He would have a right to if you specify only a 1-in. pump. He might have one that he wants to get rid of," Plowman warned.

Giving Proper Data Shifts Responsibility to Supplier

"Never specify a pump by motor size alone or by pump discharge size alone," he cautioned. "Specify the pump you want by giving the supplier the g.p.m. and head you want the pump to deliver. It is then his responsibility if the pump does not perform."

"In determining the proper pump rating, the capacity of the pump should usually be 4 g.p.m. per ton of refrigeration. Therefore, a 10-ton unit would require 40 g.p.m. of cooling water."

"The head against which the pump operates consists of the total of the following: pressure drop in the condenser, head required by the cooling tower, and the friction loss in the piping. The total of these three will be the head for which the pump should be designed."

"The first two are easily obtained. The manufacturers of the condenser and of the tower give these losses in their literature. There is no other place to get these figures and no accurate way to calculate them."

"Friction loss in the piping can be determined by knowing the size of the piping, the length of the pipes, and the number of the valves and fittings."

"With this information available, the friction can easily be determined by referring to a friction loss chart and following the simple instructions on the chart. These friction loss charts can be obtained from many sources. A chart is included in most pump catalogs, or any pump manufacturer will be glad to furnish you with a friction loss table."

Too Small Piping Can Cause Problems

"A common mistake is to use the same size pipe in the system as the pump connections. This is a very sure way to get into trouble," Plowman said. "It is seldom if ever that the pipe in the system should be larger than the pump connections."

"Small piping in a system can easily require you to use a pump with a motor one or two sizes larger than would be otherwise necessary. The larger motor and pump may be cheaper to install than larger pipe, but remember, the ultimate user must pay for power to operate the large motor from then on. It is false economy to substitute larger motors for smaller pipe."

"Too small piping can cause other problems. One of the most common is the hydraulic noise caused by high velocities in small piping. It is a good policy to keep the total friction loss in a system down to about 10 to 15 ft."

Pump with 'Steep Head Curve' Urged by Speaker

Selection of a pump with a "steep head curve" was also urged by Plowman.

"By a steep head curve we mean a pump with the head-capacity characteristic such as to cause a minimum loss in capacity when the head is increased."

"Suppose we bought a pump for 40 g.p.m. and 75-ft. head, such as the 1-hp. unit shown in Fig. 1. After a few years of operation, let us suppose that the pipes have scaled to the point where the total head is 80 ft. instead of the ori-

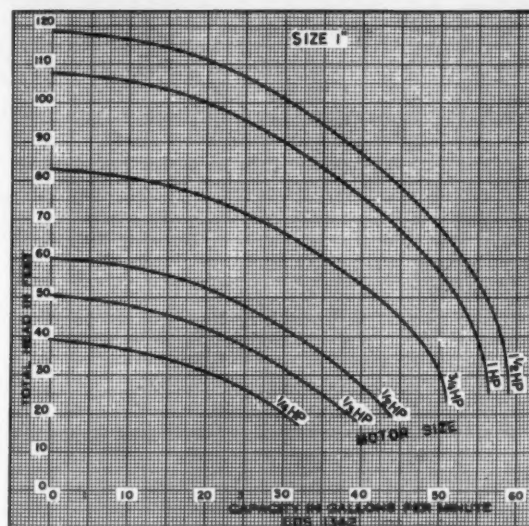


FIG. 1 shows capacity vs. head at 3,500 r.p.m. of a typical Gould centrifugal water pump with a 1-in. discharge nozzle.

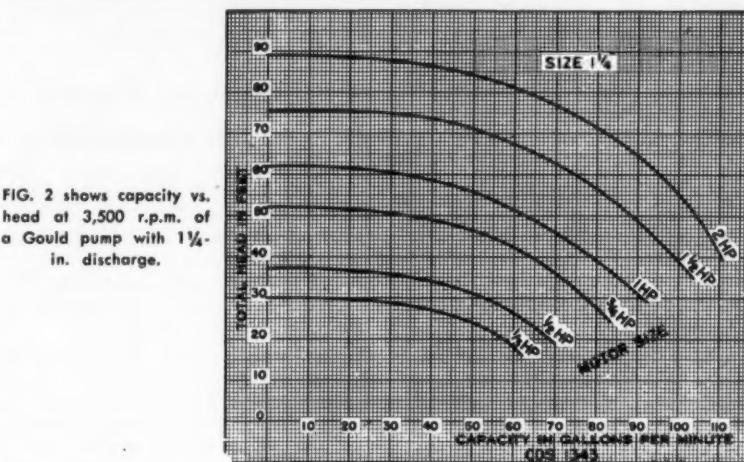


FIG. 2 shows capacity vs. head at 3,500 r.p.m. of a Gould pump with 1 1/2-in. discharge.

ginal 75 ft. By using a pump with a steep head curve, such as shown in Fig. 1, we still are able to pump 37 g.p.m. This is probably enough, and we should not have a service call for at least another year."

But a pump lacking a steep head curve, Plowman said, could have a material drop in capacity if scaling or liming increased the head 5 ft. This would necessitate a service call.

Some Common Troubles

There are some troubles, he indicated, that can happen to almost any pump under certain conditions.

"It is easy to pull a vortex at the outlet of the cooling tower. This can be caused by the cooling tower outlet's not being sufficiently submerged, or by high velocity in the water suction line that has been sized too small."

"Reverse rotation of the pump will not give satisfactory performance. Sometimes, even, the impeller will back off the shaft and do some damage to the pump. So be very careful to see that the motor is connected for proper rotation of the pump."

"Always turn the shaft of the pump by hand before starting the motor. Sometimes the impeller or the mechanical seal is stuck due to the pump's sitting in stock, and damage could result if the pump is not loosened by hand first."

Use an Adequate Strainer

"Use an adequate strainer to keep foreign material out of the pump. If foreign material gets in the pump it may also get into the condenser."

"And be sure to drain the system carefully in winter."

As for the type of pump to buy, Plowman suggested that "you should be able to disassemble it without disturbing the piping; you should be able to rotate the discharge nozzle to at least three positions; it should have a rustproof shaft, and the impeller should be positively locked on the

shaft so that it cannot be unthreaded by reverse rotation."

Where to buy a pump?

"Buy from a good, responsible wholesaler who specializes in pumps, one who has had plenty of pump experience, and one who carries an ample stock," he declared. "Beware of the man who stocks only six or eight pumps. He probably doesn't know as much about pumps as you do."

"If a man really wants to take care of your requirements, six or eight pumps wouldn't be a start. There are too many different sizes and types of pumps and sizes and types of motors."

"Call on your wholesaler for assistance. He should be able to help you on both engineering and mechanical problems."

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WATCHDOG OF THE NATION'S FOOD SUPPLY

LARKIN COILS
519 MEMORIAL DR., S.E. - ATLANTA, GA.

Architect Installs Forced Draft Cooling Tower 'Under the Front Steps' and Out of Sight

**Entrance to Equipment
Thru Door from Basement
Allows Easy Servicing**

PITTSBURGH—Recent architectural developments in the placement of Halstead & Mitchell cooling towers for residential air conditioning have pointed up the advantage of forced draft towers, the company reported recently.

"Because the forced draft tower develops its own circulation of air, it need not be placed on the grounds or in other exposed locations such as on top of roofs," the company noted. "These Halstead & Mitchell towers, therefore, interfere in no way with landscaping."

Typical of the many convenient places in which architects are today placing units is the "under-the-front-steps" location which Pittsburgh architect, J. Kenneth Myers, developed for his prize winning house in the "Parade of Homes" development outside of Pittsburgh, it was further pointed out.

"Built by Fox Construction Co., the only evidence of its Halstead & Mitchell cooling tower which the house gives, is the presence of



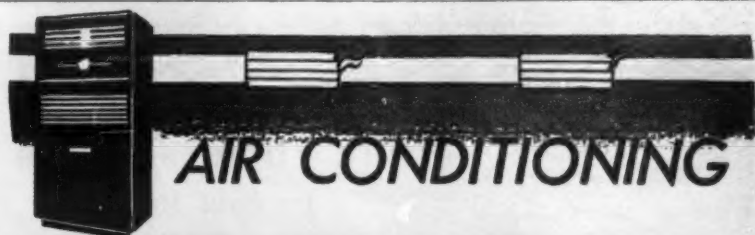
PRIZE WINNING HOME outside of Pittsburgh in which Halstead & Mitchell residential cooling tower is used with a water-cooled air conditioning system to slash water bills by more than 95%. Cooling tower is installed under front steps of the house. Housewife is shown pointing to intake air grille for tower. Landscaping is not affected.

two neat grilles in the front step porch walls," the report said. "One of these grilles serves as air intake and the other as air outlet."

"Possible servicing of the cooling tower, which is incidentally protected by the standard Halstead & Mitchell 20-year guarantee on its wetted deck surface against rotting or fungus growth, is easily accomplished. The room is entered through the basement, and pro-

vides easy working space."

Information on indoor installations of residential cooling towers is available by writing to Halstead & Mitchell, Bessemer building, Pittsburgh 22, Pa., and requesting Bulletin RE-1. This eight-page bulletin not only gives full information on capacities and sizes, but line drawings illustrate methods of cooling tower indoor installations.



COOLING TOWER in small room under building's front steps illustrates how neatly the forced draft tower fits into the architectural scheme of today's modern homes.

Permaglas Div. Names C. L. Hewitt, Jr.

KANKAKEE, Ill.—Appointment of C. L. Hewitt, Jr., widely-known heating appliance executive, as manager of heating and air conditioning sales for Permaglas Div. of A. O. Smith Corp., was announced recently.



C. L. Hewitt, Jr.

S. E. Wolkenheim, general sales manager of Permaglas, announced Hewitt's selection as another step in A. O. Smith's drive to expand in the heating and air conditioning field.

Working with Hewitt in the promotion of the accelerated Permaglas program will be J. S. Robinson as assistant manager-heating and air conditioning sales.

Hewitt is a veteran in the heating and air conditioning industry with active experience extending over a quarter century in all areas of marketing and sales management. Until two years ago he was general sales manager of L. J. Mueller Furnace Co. in Milwaukee.

For the past two years Hewitt has been active in plumbing and heating distribution on the west coast with headquarters at San Rafael, Calif.

A. O. Smith, a relative newcomer to the heating and air conditioning fields, said it has been expanding rapidly in the past two years its lines of "Lo-Boy" and "Hi-Boy" gas an oil-fired warm air furnaces.

**SUPER-FLO
FILTER-DRIER**

UP TO 3 TONS
NO PRESSURE DROP

**MOLDED REMCAL DRYING
FIBERGLAS DEPTH FILTERING**
Check Super-Flo's amazing low price, for both original equipment and replacement, against ordinary driers which do not have Super-Flo molded drying elements, massive fiberglass depth filters and spun-steel copper shells. Available to the trade through wholesalers everywhere.

**REMCO INCORPORATED
ZELIENOPLE, PA.**

A year-round air conditioning was introduced by Permaglas Div. this year. A conversion burner also is manufactured at Kankakee.

Wolkenheim declared that Hewitt is being delegated the executive sales authority to develop the company's stake in all these phases of business.

Airtemp To Participate In Program To Select Salesman of the Year

DAYTON—M. T. Bard, Chrysler Airtemp sales manager, has announced that his company will participate in the Distinguished Salesman's Award program sponsored by the Dayton Sales Executive Club and the National Sales Executive Club.

Purpose of the program is to give the public professional recognition to the top salesman in the industry, to call attention to the importance of the salesman, as the spark-plug of our competitive system, and the part he has played in making ours the highest standard of living in history, and to further elevate and dignify the profession of selling.

A trophy-award will be presented to the Airtemp district manager who evidences the most outstanding proficiency in the art of selling during the first quarter of the 1955 fiscal year—October through December, 1954. Selection will be based on per cent of sales to quota, accomplished in developing distributor-dealer programs, and achievement of over-all objectives.

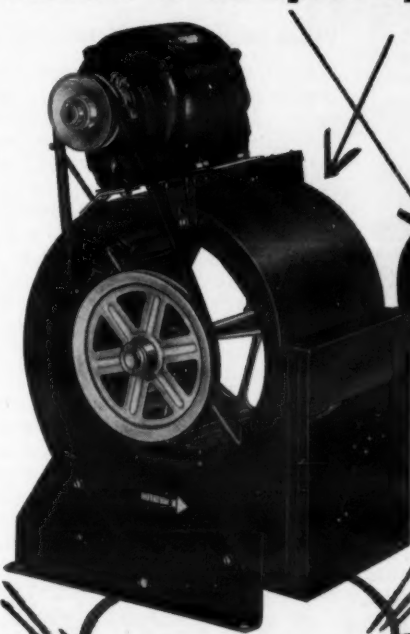
Airtemp's winning district manager, his wife, and representatives of other leading firms in the Dayton area will attend an award banquet to be held in Dayton on Jan. 17.

At the banquet he will receive the "Oscar" of the selling profession, presented by John M. Wilson, vice president of the National Cash Register Co. and "Professional Salesman Of The Year."

Heads Dept. for Green & Simes

CINCINNATI—James E. Adams, former manager of the heating department of Crane Co., has been named head of the heating, ventilating, and air conditioning department, Green & Simes, engineers.

Here's a Completely New Idea In Blowers...

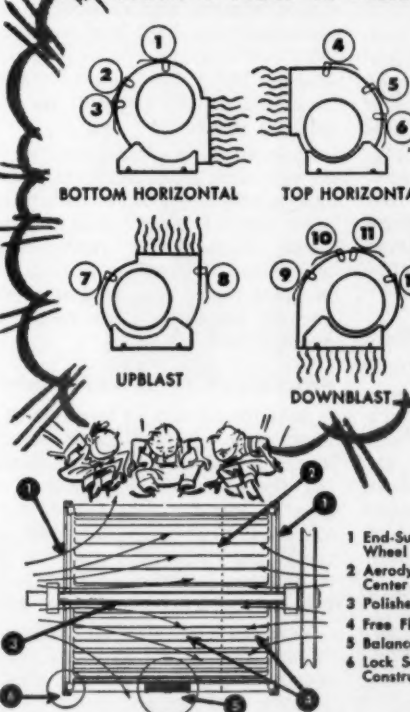


Viking

UNIVERSAL BLOWER with LOCK-ON Feet

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Refrigeration Problems and their solution

by Paul Reed

For Service and Installation Engineers



Paul Reed

Ammonia as Refrigerant (6)

As stated in a previous issue of this series on ammonia, there is no basic difference between an ammonia refrigerating system and one using sulphur dioxide, methyl chloride, or a fluorinated hydrocarbon refrigerant.

In servicing an ammonia system, the same method of testing, use of gauges, analysis, and diagnosis, are applied that we normally apply with any other system. There are differences in design, materials, and construction of course, but basically all compression systems are about alike, regardless of the refrigerant used.

In servicing, they all respond to the same logical approach as to cause and effect; if trouble shows up, there must be a cause, and this cause can be traced down by the use of gauges and thermometers, and the application of systematic reasoning.

The differences that may bother the serviceman experienced only on domestic, commercial, and air conditioning equipment using the halogenated hydrocarbon refrigerants are the odor, the size of the equipment, and the tendency toward more rust and general corrosion than he has been accustomed to.

Old-timers who were weaned on sulphur dioxide will not find ammonia so bad. This author, who has worked with both sulphur dioxide and ammonia, finds ammonia much less disagreeable than sulphur. Some ammonia men go so far as to contend that a little ammonia is good for you: that an occasional whiff of it prevents or relieves colds, but your doctor would probably prescribe another remedy.

PRECAUTIONS AGAINST AMMONIA

Be that as it may, ammonia can very definitely be dangerous if breathed in excessive quantities, or if, in liquid form, it gets on the skin, in the eyes, or saturates the clothing.

A maximum allowable concentration of ammonia in the air that you breathe, that is considered dangerous, is 100 parts per million, which is one one-hundredth of 1%. This is not very much, but it is 10 times the maximum allowable concentration for sulphur dioxide, which is 10 parts per million parts of air, or one one-thousandth of 1%.

The least detectable odor of ammonia in air is about 53 parts per million; so if you can easily smell the odor of ammonia, it is an indication that the limit for prolonged breathing has about been reached. A concentration of about 700 parts of ammonia in the air, will begin to cause smarting of the eyes; and coughing starts at a concentration of about 1,700 to 1,800 parts per million.

Thus if your eyes begin to smart

or to even be irritated by ammonia, you should get out of the contaminated atmosphere or ventilate the room well. If you can do neither, you should put on a gas mask.

If a man expects to work on or around ammonia equipment, he should provide himself with a gas mask suitable for ammonia, maintain it in good condition, and keep it near him or quickly accessible in case of emergency.

The gas mask should be of a type approved by the U. S. Bureau of Mines for use with ammonia. A wet cloth wrapped around the face is not an effective protection against ammonia. It gives a little protection against breathing the fumes, but none to the eyes, and damage to the eyes from ammonia fumes can be severe and dangerous.

If liquid ammonia is spilled upon the skin, drench the skin with water. If clothing becomes wet with ammonia, get the clothes off at once. If they are frozen, they may stick to the skin, so drench the clothing thoroughly with water, then remove. Continue to drench the skin, and finally dry it and apply a little olive oil.

If ammonia gets into the eyes, wash them thoroughly in running water (over a water bubbler is good), and apply a few drops of boric acid solution. Then see a doctor.

TOOLS AND GAUGES

In addition to a gas mask, a man who expects to work on ammonia equipment should provide himself with some other tools. Since ammonia equipment is usually in rather large sizes, he will find that he will probably need a set of larger wrenches and other larger tools. He may find that he will need a pipe vise, pipe cutter, stock and dies, and some larger pipe wrenches and "trimos."

His small gauges that he has been using are not suitable for ammonia. If he has been working with "Freon-22" (or "Genetron-141") the pressure ranges of his small gauges are probably suitable for ammonia, but the Bourdon tubes in them are probably made of brass or bronze, so he should get a set of gauges suitable for ammonia.

Also, he should have some leak testing materials, such as sulphur sticks, litmus paper, or a bottle of Nessler's reagent. He can make his own sulphur sticks, and mix his Nessler's solution from materials obtainable from a drug house, but neither are very expensive, and it will probably be found more convenient to buy these items from a refrigeration wholesaler or supply house.

SERVICE FEATURES OF AMMONIA EQUIPMENT

In some respects, the large ammonia systems are easier to work on than one might expect, and sometimes easier than air conditioning systems. An ammonia installation is likely to be more liberally provided with stop valves for segregating the various com-

ponent parts of the system, and with cross-over valves and by-pass connections for transferring the refrigerant out of one part of the system into another part for service purposes, or to impose a test pressure on a single portion of the system. Also, ammonia installations are often equipped with thermometer wells, gauge connections, drain plugs, or other fittings for convenience in service and maintenance.

The serviceman should also, of course, provide himself with a pressure-temperature table for ammonia at saturation. These are available in almost any refrigeration handbook. Complete thermodynamic tables for ammonia, including superheat tables, are contained in Circular 142 of the U. S. Bureau of Standards, which may be obtained from the Supt. of Documents, U. S. Government Printing Office, Washington 25, D. C., for 20 cents per copy. Send cash, not stamps.

If the ammonia system includes a brine tank, as many of them do, he may have need of a salometer and other test material for the brine, but these will usually be kept on hand at the plant.

PROBABLY MORE CORROSION

Since the refrigerant lines, condenser, evaporator coils, etc., are most commonly made of iron or steel, and since brine tanks and brine circulating systems are commonly found on ammonia systems, perhaps the outstanding condition that the service engineer may find to be somewhat different than on the systems using the halogenated halocarbon refrigerants is the amount of rust and general corrosion that he will encounter on many ammonia systems.

Much of the rust and corrosion will be external, but since water in an ammonia system does not cause frozen expansion valves and float valves, there is apt to be more internal corrosion in an ammonia system than is ordinarily encountered in systems using the halogenated hydrocarbon refrigerants.

In an ammonia system that was originally installed carefully, and which has had proper maintenance since, internal and external corrosion has been kept under control. This particularly applies to those plants that have had regular maintenance and periodic and systematic inspection.

It is often the small plants that do not have regular maintenance that are found to have rusty flange bolts and cap screws, rusty pipe or vessel walls, stuck valve stems, leaks, and internal corrosion, and in which foul gases, dead ammonia, and oil logging will be more frequently found.

SERVICE AND MAINTENANCE

Scale traps should be checked at least once a year. Some maintenance instructions call for changing the compressor oil every six months, for the compressor oil is more apt to become dirty and contaminated with water than is true of systems using one of the halogenated halocarbon refrigerants.

Samples should occasionally be drawn from the bottom drain cocks or plugs of receivers, accumulators, condensers, evaporators, and other places where oil may accumulate, and checked for the oil content and the presence of water. These vessels may require complete draining and the oil-refrigerant-water mixture discarded; or they may be drained to regenerators and the mixture purified.

"Foul gases" (non-condensables) are more commonly found in a large ammonia system than the smaller systems using the halocarbons. Most of these foul gases are air and probably nitrogen and some hydrogen formed from the decomposition of ammonia by heat. There has been a good deal written on these foul gases and there is a considerable amount of disagreement as to their composition.

Regardless, the ammonia system should be checked periodically for the presence of non-condensables. The method of checking is the same as that used with the smaller systems, and was described in the series entitled "Non-condensables in the system" appearing in this column in the issues of Oct. 13, 20, and 27, 1952. The use of purgers, both manual and automatic, was discussed in this column in a series entitled "Manual and automatic purgers" in the issues of July 26, Aug. 2, and Aug. 9, 1954.

AMMONIA AS A FERTILIZER

Although this series has dealt with ammonia primarily as a refrigerant, no discussion on ammonia these days would be quite complete without reference to the use of anhydrous ammonia as a fertilizer. The expanded use of ammonia for this purpose has been barely short of phenomenal, and needless to say, much to the delight of the manufacturers of ammonia.

Ammonia consists of one atom of nitrogen and three atoms of hydrogen (NH₃), but its weight characteristics are far different than the ratio of three hydrogen to one nitrogen atoms might imply. Nitrogen is a "heavy" gas, with an atomic weight of 14.008. Hydrogen is the "lightest" of all the elements, with an atomic weight of only 1.008 or 3.024 for the three atoms of hydrogen in ammonia, against 14.008 for the one atom of nitrogen. Thus ammonia's molecular weight is 17.03, of which 82½%, or about 5/6 is nitrogen.

Nitrogen is essential to plant growth, and all fertilizers are heavy in nitrogen content. Ammonia, being very rich in nitrogen in easily available and usable form, makes an excellent fertilizer. It is sometimes dissolved into the irriga-

tion water, but lately the practice of feeding the ammonia directly into the soil has come into common use.

A special farm implement, similar to a cultivator, or an attachment for a cultivator, is equipped with a bank of nozzles attached to a cylinder of ammonia mounted on the implement. The nozzles follow the discs under the surface, and the ammonia is squirted directly into the soil. Some amazing increases in crop yields have been reported as a result of the use of ammonia as a fertilizer.

Building Being Erected For Eastern Supply

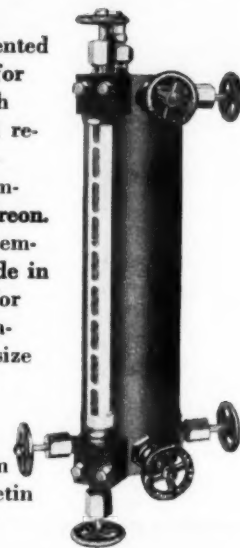
MOUNT VERNON, N. Y.—Eastern Supply Co. here, wholesale distributor of refrigeration and air conditioning equipment, is erecting an 8,000-sq. ft. building, it was announced recently by Lawrence R. Gelles of the firm.



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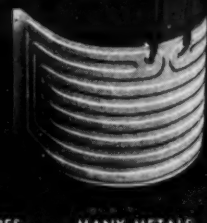
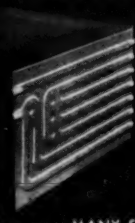
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Philco Suit--

(Concluded from Page 1, Col. 3)
products to wholesalers on the condition that the wholesalers will not deal in products made by Philco's competitors. This violates the Clayton Act, according to the Justice Department.

In a statement on the Philco suit, Attorney General Brownell said that "The complaint charges that a manufacturer may not lawfully restrict the customers to whom, or the territory within which, the purchaser from the manufacturer may resell the manufacturer's products."

James H. Carmine, president of Philco Corp., issued the following statement on the suit:

"Through the years, Philco has built up a loyal organization of more than 100 independent wholesale distributors whose function has been to provide the public with quality products on a volume basis at the lowest possible price.

"Our philosophy has been that each distributor should handle a designated territory and select active, local dealers who will promote Philco products at the retail level, and provide the sales and service facilities which the public expects and to which we feel it is entitled.

"In a sweeping attack upon an established distribution system which has been widely used for years by manufacturers of brand-name products to protect the public, the government is attempting to impose an entirely new concept of anti-trust regulation and business control.

"The government suit against Philco is a radical departure from previous legal precedents. It also presents a new and dangerous challenge to those manufacturers who are endeavoring to preserve the system of independent distributors. It will force manufacturers to establish their own distributing subsidiaries and it might well result in the end of many small businesses which are now serving the public as independent wholesale distributors.

"Philco does not think it violates the anti-trust laws when it seeks to have its product handled by dealers who have been trained in Philco's standard of honest representation and full service to the customer.

"A manufacturer of home appliances, like a television set, a refrigerator, or a home freezer, has in Philco's opinion a continuing obligation to have service and warranty facilities constantly available for the benefit of the purchasers.

"If its products are bandied about by untrained, unfranchised dealers unknown to the manufacturer and unequipped to give service to the purchaser, not only the manufacturer, its distributors, and the dealers selected by them will suffer, but most importantly the public will suffer.

"We have every confidence that we shall be able to convince the court of the reasonableness of our constructive philosophy of distribution."

Carrier Merger--

(Concluded from Page 1, Col. 5)

Speaker for Affiliated Gas, Harvey said that from his company's standpoint "the proposed merger with the leader of the air conditioning industry provides a major opportunity for our stockholders in this rapidly growing field, due to increased financial strength and a greater diversification of both products and markets."

Under the merger plan, each owner of 100 shares of Affiliated Gas common stock would receive in exchange for his holdings \$500 par value of 4½% cumulative preferred stock and 18 shares of Carrier Corp. common.

Affiliated Gas Equipment earned \$1,239,805 or 93 cents a common share, on sales of \$37,199,718 in the first nine months of this year. In the year ended Dec. 31, 1953, the company earned the equivalent of \$1.84 a share, on sales of \$63,324,549.

Wampler has predicted that Carrier's net earnings for the fiscal year ended Oct. 31 would be somewhat more than the \$4.19 a share earned in 1953, even though sales would be 10 to 15% less.

Sales for the 10 months ended Aug. 31, 1954, were \$125,628,000, compared with \$133,747,000 for the like period in the 1953 fiscal year. Wampler attributed the decrease to a decline of \$21,303,000 in government contracts which was not offset by an increase in \$13,184,000 in civilian goods sales.

Shana Names Miller--

(Concluded from Page 1, Col. 4)

appointment by Shana were his positions as president of Jack Miller, Inc., manufacturer of low temperature cabinets, and his position as vice president of the Dispenser Corp. of America, distributor of carbonating plants and beverage dispensing equipment.

His new position with Shana will cover the sales distribution and awarding of franchises for Shana air-cooled air conditioning units (2, 3, and 5 ton); Shana-Air water-cooled residential air conditioning (2, 3, and 5 ton); Shana combination units in one self-contained cabinet (water cooled or air cooled; either oil or gas fired); Shana-Duo units and Shana-Heat hi-boy and counterflow oil or gas-fired winter air conditioners.

Coleman Line--

(Concluded from Page 1, Col. 3)

the company's history, Coleman will launch an aggressive dealer franchising program, step up its distributor-dealer sales and installation training, and intensify advertising and sales promotion activities.

As a part of the distributor preview program, W. C. Coleman, 84-year-old founder and board chairman, presented sales awards to 10 distributors.

The top award, a gold cup, went to Walther Bros. Co., Inc., of New Orleans, as the outstanding Coleman distributor in the nation. This was for the best performance nationally in the sale of gas and oil space heaters, water heaters, wall heaters, floor furnaces, and "Blend-Air" heating and "Blend-Air Conditioning."

Bronze plaques were presented to Marshall-Wells Co., Billings, Mont.; Hardware Products Co., Sterling, Ill.; Nelson & Small, Portland, Me.; I. W. Phillips & Co., Tampa, Fla.; J. D. Johnson Co., Pensacola, Fla.; Lenz-Knight Co., Providence, R. I.; Gunn Distributing Co., Little Rock, Ark.; and Jericho Plumbers Supply Co., Centereach, Long Island, N. Y.

Pender Quits Magic Chef

ST. LOUIS—Magic Chef, Inc. has announced the resignation of Marc W. Pender, vice president in charge of sales.

Kelvinator Price Schedule

Model	Capacity	Width	Height	Description	Price†
*Foodarama	15.9	47½"	60"	Upright freezer and moist-cold refrigerator side by side in a single two-door cabinet	\$629.95
*KC-130	12.9	31½"	65½"	Two-door combination freezer and automatic defrosting refrigerator	529.95
*KC-120	11.9	31½"	61½"	Single-door combination freezer and automatic defrosting refrigerator with freezer at the bottom	469.95
*KA-120	11.6	31½"	61½"	Single door, timer controlled, automatic defrosting	399.95
*KP-110	10.5	28½"	59"	Single door, pushbutton automatic defrosting	319.95
KS-110	10.5	28½"	59"	Single door, manual defrosting	279.95
KP-81	8.1	24½"	53½"	Single door, pushbutton automatic defrosting	249.95
KS-81	8.1	24½"	53½"	Single door, manual defrosting, crisper, butter keeper	229.95
KA-81	8.1	24½"	53½"	Single door, manual defrosting	199.95

*Available in eight custom colors at slight extra charge.

†Suggested prices include 5-year-protection plan on sealed unit.

Hotpoint Price Schedule

REFRIGERATORS		Price	RANGES—CUSTOMLINE		Price
Model			Model		
5EB77	No List Price		RJ-2		\$159.95
5EC105	\$299.95		RJ-1		179.95
5EG102	399.95		RK-2		69.95
5EH116	499.95		RK-3		79.95
5EW115	529.95		RK-1		119.95
5EN115	599.95		ROOM AIR CONDITIONERS		
RANGES—39 INCH			5EZ40		\$359.95
RB-63	\$189.95		5EZ50		399.95
RB-65	269.95		5EZ80		519.95
RB-66	349.95		CLOTHES WASHERS		
RC-23	359.95		LK-2		\$329.95
RD-23	499.95		LJ-2		279.95
RANGES—30 INCH			LH-7	No List Price	
RF-2	\$189.95		CLOTHES DRYERS		
RG-2	259.95		LG-2		\$269.95
RH-2	349.95		LB-1	No List Price	

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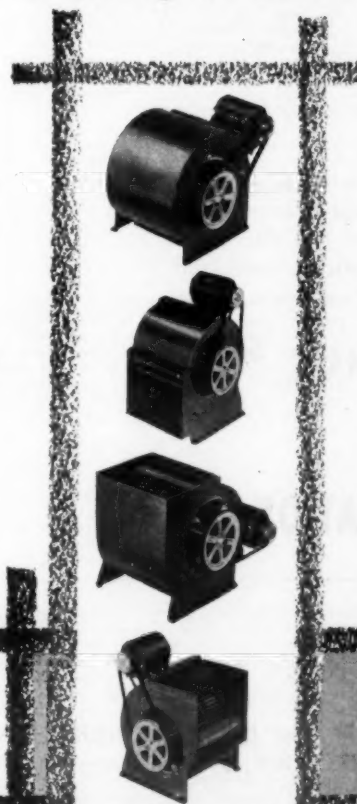
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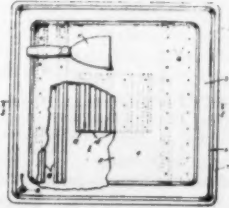


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PATENTS

Week of August 17

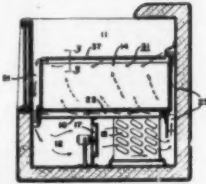
2,686,404. ICE CREAM MAKING PLATE. Lowell M. Kurtz, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application Sept. 9, 1952, Serial No. 306,535. 6 Claims. (Cl. 62-1.)



1. Means for making ice cream or the like comprising: a chamber including spaced walls, said chamber containing a freezing solution, said freezing solution filling the space between said walls, a member carried by one of said walls and projecting toward the other of said walls, another member carried on said other wall and projecting toward said first-mentioned wall, said member being in camming engagement, at least one of said members being resilient, said members resisting distortion of said walls during expansive movements of said walls resulting from freezing of said solution, said members drawing said walls toward each other upon melting of said solution, said members providing heat transfer paths from said walls into said solution, said solution freezing when said chamber is exposed to suitably low temperatures, one of said walls having a depression formed therein, said depression being adapted for holding a thin layer of a mixture for making ice cream or the like in heat exchange relation with said frozen solution thereby to freeze said mixture to the bottom of said depression, and said bottom of said depression being shaped to facilitate scraping of frozen mixture from and respraying of said frozen mixture on said bottom of said depression.

thereby to obtain a satisfactory frozen mixture consistency.

2,686,405. DISPLAY REFRIGERATING APPARATUS. Joseph R. Pichler, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application July 26, 1952, Serial No. 301,141. 9 Claims. (Cl. 62-89.5.)

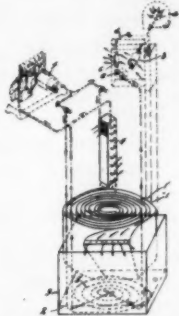


1. In combination with a substantially open top refrigerated display case having the display section thereof divided into compartments by a vertical hollow flue member through which cold air is circulated upwardly from below the compartments and is discharged over food products stored therein, an air deflecting cap removably fitted upon the open upper end of said hollow flue member, said cap including an imperforate top wall and side walls depending therefrom, the side walls of said cap having portions bent therefrom providing a row of outlet openings therealong for directing air laterally out of said flue member, and said bent portions of the side walls of said cap engaging the top edge of the side walls of said flue member for spacing the top wall of said cap a predetermined distance above the upper open end of the flue member.

2,686,406. AIR CONDITIONER. Luis Fernandes Pessoa, Rio de Janeiro, Brazil. Application Dec. 6, 1950, Serial No. 199,413. 3 Claims. (Cl. 62-140.)

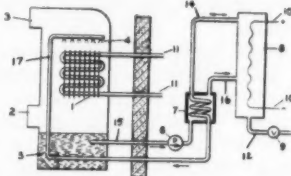
2. In combination with means for filtering and cooling an air stream by passing the same through a wet filter and a cold water spray, an apparatus for drying the filtered and cooled air comprising a tank, two concentric spiral air passages in said tank, said passages being in heat exchange relationship and both terminating in a central chamber, cooling means in said chamber, means for propelling air inwardly through one of said passages and outwardly through said other passage, a cooling coil in the bottom

of said tank, for cooling the condensate deposited therein during the air drying process, and means for circulating said



cooled condensate to the means for filtering and cooling the incoming air.

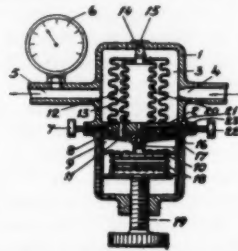
2,686,407. METHOD OF ELIMINATION OF REFRIGERATION FROST. Robert J. Zellner, Marinette, Wis., assignor to Ansul Chemical Co., Marinette, Wis., a corporation of Wisconsin. Application Sept. 5, 1952, Serial No. 307,961. 1 Claim. (Cl. 62-170.)



The method of continuously removing moisture formed on cooling coils which comprises continuously circulating an organic solvent selected from the group consisting of N-hexyl amine, alpha methyl benzyl monoethanol amine, diethylene glycol n-hexyl ether, tripropylene glycol isopropylether and 2,4,6-trimethyl pyridine, over the coils to dissolve the moisture, said solvent dissolving water at the evaporator temperatures of the cooling coils but not at higher temperatures, continuously collecting the mixture of solvent and water, heating the mixture to form separate liquid layers of solvent and water, separating said layers and recircu-

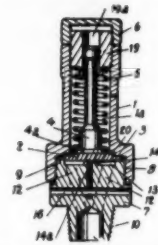
lating the separated solvent over the cooling coils to absorb additional moisture deposited thereon.

2,686,532. BALANCED PRESSURE AND VACUUM REGULATOR. Carl Gustaf Hard af Segerstad, Sandviken, Sweden. Application Jan. 25, 1949, Serial No. 72,592. Claims priority, application Sweden, Jan. 29, 1948. 1 Claim. (Cl. 137-500.)



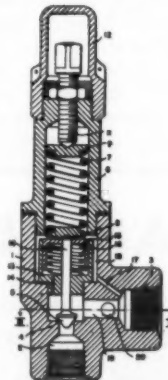
In a device for regulating fluid pressure, a valve housing including a first chamber, a fluid inlet to and a fluid outlet from said chamber, a first valve for controlling the fluid pressure in said chamber, a first bellows in said chamber connected with said valve for actuating the same, a second bellows disposed withing said first bellows and connected therewith to provide a damping action for said valve, a channel connecting the interior of said second bellows with the atmosphere, an adjustable throttling device connected with said channel for controlling the amount of damping action provided by said second bellows, a second chamber in said valve housing, a passageway connecting said second chamber with the interior of said first bellows, a second channel interconnecting said first and second chambers, a second adjustable throttling device connected with said second channel for controlling fluid flow between said first and second chambers, a third channel leading from said second chamber to atmosphere, a second valve controlling fluid flow into said third channel, and a spring loaded diaphragm connected with said second valve for actuating the same, said diaphragm also constituting a portion of the wall of said second chamber.

2,686,533. DIAPHRAGM TYPE SAFETY VALVE. Jean Louis Gratzmuller, Paris, France. Application April 24, 1950, Serial No. 157,789. Claims priority, application France April 28, 1949. 3 Claims. (Cl. 137-510.)



1. In a safety valve the combination with a base member formed with a pressure chamber surrounded by an annular plane clamping surface, at least one inlet passageway to admit pressure fluid into said pressure chamber, an outlet port located axially of said pressure chamber and a valve seat lip surrounding said port to provide a seating surface of restricted area, of a cap member mounted on said base member and having a clamping surface in opposition to the clamping surface of the base member, an annular recessed shoulder in said cap member adjacent its clamping surface and surrounding a cylindrical spring chamber axially aligned with said pressure chamber, a flat faced spring pressed piston slidably mounted in said spring chamber, said recessed shoulder being of a radial width at least equal to the thickness of a normally flat and unstretched sealing element of readily yieldable resilient material having its periphery clamped and compressed between the said clamping surfaces of the base member and the cap member, the depth of recessing of said shoulder from said clamping surface of the cap member being of a dimension of substantially one-half of the difference between the thickness of the uncompressed sealing element and of the compressed sealing element whereby one side of the uncompressed portion of the sealing element lies in unstressed condition across the working surface of said piston and said shoulder, and whereby the other side of the sealing element presents a sealing surface to the said valve seat lip, said spring pressed piston exerting a pressure on the central portion of said sealing element in a direction to press the sealing surface of said sealing element against said valve seat lip to close said outlet port.

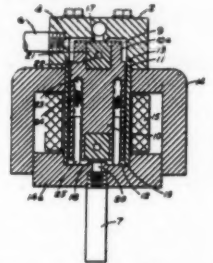
2,686,534. NONCHATTERING RELIEF VALVE. Carl Oscar Josef Montellus, Stockholm, Sweden. Application Sept. 27, 1950, Serial No. 186,977. 2 Claims. (Cl. 137-514.)



1. A relief valve comprising a valve casing including an inlet port, an outlet port, a passageway extending through the valve between said inlet and said outlet ports and a valve seat in the wall surrounding said passageway, a movable valve member adapted to engage said seat, a

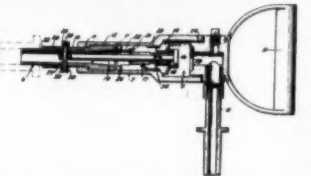
main spring positioned to urge said valve member into engagement with said valve seat, said valve member being adapted to be raised from said valve seat by the pressure of fluid in said inlet port acting thereon against the action of said main spring, a damping piston, means providing a chamber housing said piston and extending longitudinally of said valve member, said damping piston being movable in the chamber independently of said valve member and positioned to be urged toward said valve seat by said main spring, a second spring weaker than said main spring urging said damping piston against the action of said main spring, a first passage providing communication between the side of said piston away from said main spring and said valve passage on the downstream side of said valve seat, a second passage providing communication between the side of said piston toward said main spring and said valve passage on the downstream side of said first passage, the fluid pressure drop in said valve passage between said first and second passages providing a difference in the pressures of the fluid acting upon opposite sides of said piston, said piston being urged against the action of said main spring by the difference in pressures of the fluid on opposite sides of said piston when fluid flow exists through said valve passage, and closing of said valve member by said main spring being delayed by the resistance to displacement of the fluid under said piston afforded by said first passage.

2,686,535. SOLENOID VALVE. Robert G. Le Tourneau, Longview, Tex., assignor to R. G. Le Tourneau, Inc., Peoria, Ill., a corporation of California. Application Jan. 23, 1950, Serial No. 140,092. 3 Claims. (Cl. 137-620.)



1. In an electromagnetically operated valve assembly for controlling fluid flow, a housing of magnetic material, the lower part of the housing being closed, a non-magnetic head attached to said housing to close the upper open part of said housing, a non-magnetic cylindrical sleeve disposed within said housing and said head and forming a hermetically sealed chamber within said housing, an electromagnetic coil mounted around said sleeve, a magnetic slug freely suspended within said enclosure, said slug being spring-biased toward said head, a load port for supplying fluid from said chamber, a first port in said head and a second port in said housing each connecting with the chamber, said plunger having resilient valve inserts in each end thereof cooperating with the first and second ports so that when said coil is energized said second port is closed and said first port is opened connecting the load port and said first port, and when said coil is de-energized said first port is closed and said second port is opened connecting the load port and said second port, said slug having a plurality of internal bores extending into one end thereof and having coil springs disposed within said bores to bias said slug towards said first port.

2,686,536. SEQUENTIALLY OPERATED VALVE FOR CONDENSER TUBE BLOW. ERS. William S. Campbell, Astoria, N. Y. Application July 29, 1949, Serial No. 107,480. 2 Claims. (Cl. 137-630.15.)



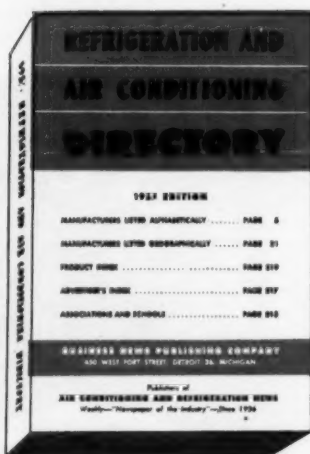
1. In a tube-cleaning device, a tubular housing comprising a barrel with an enlarged chamber at one end thereof and a ferrule of reduced diameter at the other end, an exteriorly projecting discharge tube slidably guided in said ferrule and providing an inner portion of enlarged diameter for slidably guided engagement with the bore of said barrel, a reciprocable main valve provided with a head which is disposed in said enlarged chamber and adapted when closed to seal said enlarged chamber from said barrel, said reciprocable main valve being also provided with a stem which is slidably guided in said barrel, the stem of said main valve having a bore extending longitudinally therethrough, the head of said main valve having at least one port communicating with said barrel, a reciprocable pilot valve provided with a head which is disposed in said enlarged chamber and adapted when closed to seal the port in the head of said reciprocable main valve, said reciprocable pilot valve being also provided with a stem which is slidably guided in the longitudinal bore in the stem of said main valve, and an actuating element being slidably disposed in the longitudinal bore in the stem of said main valve and connected to and axially movable with said discharge tube, said actuating element and said discharge tube being disposed for axial abutting engagement with the stems of said pilot valve and said main valve, respectively, to open said valves in that order but being otherwise wholly disconnected therefrom.

2,686,596. DEHYDRATOR. Edgar C. Storms, Detroit, Mich., assignor to Industrial Wire Cloth Products Corp., Wayne, Mich., a corporation of Michigan. Application Jan. 7, 1952, Serial No. 265,220. 1 Claim. (Cl. 210-131.)

In a dehydrator for refrigerating systems, in which a body of dehydrating material is enclosed in a tubular casing provided with an axially located inlet and

(Continued on next page)

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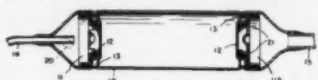
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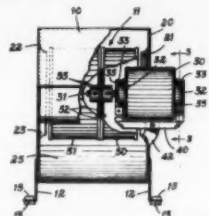
(Continued from preceding page)

in which perforated partition elements are fixed adjacent said inlet and outlet for locating and confining said material, the partition elements consisting of cup members opening toward the inlet and



outlet, each having its edge turned back upon itself and a cup shaped screen fixed within the turned back edge and having its bottom area spaced from the bottom area of the cup member, the bottoms of said cup members having a central imperforate area surrounded by an area provided with openings and having louvers over said openings.

2,686,630. BLOWER. John B. Burrows, Dayton, Ohio, assignor to The Lau Blower Co., Dayton, Ohio, a corporation of Ohio. Application Aug. 16, 1950, Serial No. 179,730. 6 Claims. (Cl. 230-117.)

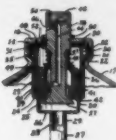


1. A blower assembly comprising a double inlet blower wheel, a partition within said wheel blocking the flow from one end thereof to the other, a housing for said wheel having inlets at each end thereof, a motor having a drive shaft, means supporting said wheel on said shaft with said motor extending into the adjacent end of said wheel in telescoping relation therewith, means secured to said housing for suspending said motor within one of said inlets with the center transverse plane through said motor substantially coinciding with the outer surface of said housing, said motor being of materially smaller diameter than said inlet to provide an annular passage for flow of air therethrough while leaving the other said inlet unobstructed, said partition being located at a greater distance from said unobstructed inlet than from said one inlet to provide greater capacity in the portion of said wheel adjacent said unobstructed inlet for effecting a substantially balanced output throughout the length of said wheel.

2,686,652. VALVE APPARATUS. George E. Carlson, St. Louis Park, and J. Parker Bader and Nathan B. Owen, Minneapolis, Minn., assignors to Viking Valve Co., St. Louis Park, Minn., a corporation of Minnesota. Application Jan. 29, 1951, Serial No. 208,352. 6 Claims. (Cl. 251-353.)

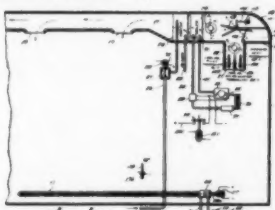
1. A valve apparatus for a container having a constricted neck, said apparatus comprising an open bottomed cup-shaped member having an upper portion adapted

to be secured in the container neck and having in its lower portion a pair of axially spaced inwardly directed flanges, hollow resilient means clamped between said flanges comprising a radially in-



wardly thickened lower portion having an axial opening in its bottom end forming a valve seat communicating with the opening in the bottom of the cup-shaped member and having a relatively thin diaphragm portion projecting radially inwardly and upwardly from its upper portion and extending above the upper edge of said cup-shaped member, and a valve stem mounted within the hollow of said resilient means having the diaphragm portion thereof embracing its intermediate portion in sealed relation and terminating at its bottom in a radial enlargement constituting a valve cooperating with said seat, said stem having a bore communicating with the hollow of said resilient means above said enlargement and said enlargement being normally held engaged with said seat by the resilience of the diaphragm portion of the resilient means and being depressible with flexing of the diaphragm portion to unseat the valve.

2,686,661. AIR DAMPER CONTROL FOR HEATING AND COOLING SYSTEMS. Laurence H. Gillick, Evanston, and Timothy J. Lehane, North Riverside, Ill., assignors to Vapor Heating Corp., Chicago, Ill., a corporation of Delaware. Application April 5, 1949, Serial No. 85,562. 2 Claims. (Cl. 257-3.)



1. A system for supplying tempered air to an enclosed space to maintain a desired temperature therein, comprising, in combination, an electrically operated blower communicating with the enclosed space and with the outside atmosphere for delivering a stream of air into said enclosed space, an electrically operated exhaust fan connected in parallel with said blower and operable to withdraw air from the enclosed space and discharging the same into the outside atmosphere, means for altering the temperature of the air stream delivered by said blower, a damper operable to vary the proportions of external air and recirculated air delivered into the enclosed space and electrical means for actuating said damper, means including a thermostat responsive to the temperature of the enclosed space and a relay control thereby for increasing and decreasing the effectiveness of said temperature altering means, means including a second thermo-



PROCUREMENT INFORMATION

The following is a list of proposed procurements issued by the various indicated U. S. Government procurement offices. This list is compiled and made available daily on a free pick-up basis. Prospective bidders may obtain complete bid sets by a request to the purchasing officer under which the purchase is listed in this Synopsis. Be sure to identify completely the bid invitation you wish by including in your request the item description, the invitation number or reference number and the opening date.

DEPARTMENT OF DEFENSE

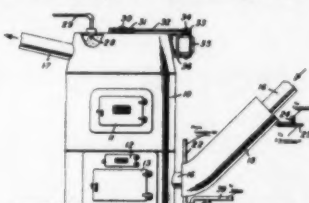
It is not necessary to refer solely to the issuing office for additional data on a bid invitation issued by any of the following U. S. Army Ordnance Offices: Ordnance Tank Automotive Center; Detroit Arsenal; Frankford Arsenal; Picatinny Arsenal; Rock Island Arsenal; Springfield Armory; Watervliet Arsenal; and Watervliet Arsenal. Complete information on any purchase listed by any of those offices alone can be obtained from the Ordnance District Office nearest you. Its address is on file in your nearest Department of Commerce Field Office. Do not ask an Ordnance District Office for information on a purchase unless it is listed by one of the above-named offices.

Invitations for Bids numbers will be followed by the letter "B." Requests for proposals or quotations will be indicated in this column by the letter "Q," or, if numbered, the number will be followed by the letter "Q."

Description	Quantity	Invitation No.	Opening Date
Navy Purchasing Office, 3rd Ave. and 29th St., Brooklyn, 32, New York			
Gas Freon.	1090 lb.	(IFB-N140-213-55-B)	27 Dec 54
Liquid level indicating gage equipment.	Various	1574-Q	20 Dec 54
Contracting Officer, Local Purchase Branch, WCUR WADC, Wright-Patterson Air Force Base, Ohio			
Test chassis assembly (portable mount), tractor cold chamber.	2 ea.	(33-616-55-51)	27 Dec 54
Test chassis assembly (portable mount), tractor cold chamber, minus pedestal assembly.	4 ea.	(33-616-55-51)	27 Dec 54
Pedestal assembly, test chassis cold chamber.	2 ea.	(33-616-55-51)	27 Dec 54
Pedestal assembly, test chassis cold chamber.	2 ea.	(33-616-55-51)	27 Dec 54
Chicago Quartermaster Depot, Quartermaster Purchasing Div., Chicago, Illinois			
Bid forms now available. Do not request after opening date.			
Frozen food cabinet.	284 ea.	55-208B	23 Dec 54
Officer in Charge of Construction, Fifth Naval District, Norfolk, Virginia			
Automatic temperature control at Naval Air Station, Chincoteague, Va. Deposit of \$10 required for Plans and Specs.	Job	43148	30 Dec 54

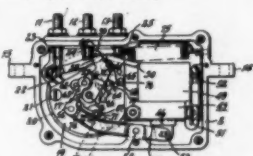
stat responsive to a predetermined outside temperature and a relay control thereby for varying the operating speeds for said blower and said exhaust fan, a relay controllable by the last mentioned relay and adapted to control the energization of said damper actuating means, whereby the said damper may be altered to reduce the temperature altering load on the system by varying the proportion of recirculated air and fresh air in relation to the temperature requirements of the enclosed space, a master relay, a third thermostat responsive to a predetermined higher outside temperature for controlling the master relay, and a relay cooperating with a closed contact of said master relay for closing an energizing circuit to further alter the operating speeds of said blower and said fan.

2,686,662. AIR CONDITIONER FOR HOT AIR FURNACES. William T. Smith, St. Louis, Mo. Application April 12, 1951, Serial No. 220,553. 7 Claims. (Cl. 257-8.)



1. An apparatus of the character described comprising, in combination with a furnace having a housing, inlet and outlet ducts extending from said housing, and a firebox mounted in said housing in spaced relation to the sides of said housing, the provision of means for cooling, humidifying and dehumidifying air passing through said ducts and said housing, said means including a cylindrical casing connected into one of said ducts, a cooling coil mounted in said casing and having an inlet pipe and an outlet pipe extending through said casing, means for collecting moisture from the interior of said casing, and means for leading to the outer atmosphere refrigerant gas emanating from said cooling coil.

2,686,655. SOLENOID ACTUATED SWITCH. Robert W. Chester and Robert T. Barnett, Dayton, Darrell E. Boyer, Vandalia, and John H. Smith, Dayton, Ohio, assignors to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application May 1, 1953, Serial No. 285,404. 10 Claims. (Cl. 200-105.)



1. An electric switch including in combination, a housing, a shaft rotatably supported in said housing, a movable contact assembly carried by said shaft, indexing means operatively associated with said shaft, said indexing means including a ratchet wheel carried by said shaft and a pawl assembly operatively associated with said ratchet wheel comprising an operating pawl and a pair of holding pawls operative in one position to engage said ratchet wheel and prevent rotary movement thereof in both directions, means operatively associated with said pawl assembly for simultaneously disengaging one of said hold pawls from said ratchet wheel to permit rotary movement thereof in one direction and effecting movement of said operating pawl in the other direction throughout the distance of one ratchet tooth and into operative engagement with said ratchet wheel, and means

Government Contracts

Office of the District Engineer, Washington District, First and Douglas Sts., N.W., Washington 25, D. C.
Mechanical ventilation of Job (ENG-49-080-55-26-25).
barracks buildings, invitation for bids will be issued on or about 14 December 54. 6 Jan 55 On or About

GENERAL SERVICES ADMINISTRATION

General Services Administration, Business Service Center, 7th & D Sts., S.W., Washington 25, D. C.
Air conditioners. 300 ea. 4H-55210 30 Dec 54
Air conditioning cabinet. 8 ea. 4H-55275-R 7 Jan 55
units for combined heating and cooling.

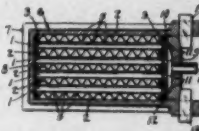
VETERANS ADMINISTRATION

Procurement Division, Supply Service, Department of Medicine & Surgery, Veterans Administration, Washington, D. C.
Cooling unit refrigerated 6 ea. A-215 27 Dec 54
water cooler.

CONTRACTS AWARDED THROUGH DEC. 10

Procurement Division, P.O. Box 393, Holloman Air Force Base, New Mexico
Evaporative coolers (installation). AF-29(600)-516-10. \$29,531.—Standard Heating and Ventilating Co., Inc., P.O. Box 1107, Albuquerque, N. M.
Louisville District, Corps of Engineers, U. S. Army, P.O. Box 59, Louisville 1, Kentucky
Installation of exhaust systems for motor repair shops, including exhaust fan, exhaust manifold, flexible tubing and electrical work, in tank shops. Location—St. Louis, Ky.—Job, \$29,016.—Harping Tempered Air Corp., 1000 E. Kentucky St., Louisville, Ky.
Corps of Engineers, U. S. Army, Office of the District Engineer, Fort Worth District, 100 W. Vickory Blvd., Fort Worth, Texas
Cold storage and meat cutting plant, Abilene Air Force Base, Abilene, Texas (Invitation No. ENG-41443-55-36).—Job, \$153,927.—Y & N Construction Co., 202 37th St., Lubbock, Texas.
Prime contractor has subcontracts open for the following:
Electrical, plumbing, heating, mechanical and related items, sprinkler system and roofing.
General Services Administration, Business Service Center, 219 S. Clark St., Chicago 4, Illinois
Refrigerators.—25 ea. \$12,275.—Jordan Refrigerator Co., Inc., 7900 Tabor Rd., Philadelphia 11, Pa.
Refrigerators.—110 ea. \$21,046.—Westinghouse Electric Corp., 1825 "K" St., N.W., Washington 6, D. C.
General Services Administration, Business Service Center, Region 2, 250 Hudson St., New York 13, N. Y.
Fans, Inv. #57973.—1671 ea. \$33,403.—Emerson Elec. Mfg. Co., 8100 Florissant Ave., St. Louis 8, Mo.
Fans, Inv. #57973.—1790 ea. \$32,094.—Kisco Co., Inc., 2414 DeKalb St., St. Louis, Mo.

Wis., a corporation of New York. Application Aug. 17, 1951, Serial No. 242,290. 1 Claim. (Cl. 23-157.3.)



A method of manufacturing heat exchanger sections, which comprises positioning a plurality of metal tubes in spaced relation transversely of a pair of vertically extending tube sheets with the tubes lying one above the other in vertical spaced relation and projecting through the tube sheets and being secured thereto, said tubes being of oblong cross-sectional shape for ready expansion thereof, placing said tubes and tube sheet within a confining fixture provided with an upper and lower plate and open on the sides and having an end wall extending between the plates and over one end of the tubes, and said tube sheets engaging the upper and lower plates of the fixture, inserting corrugated metal sheets from one side of the fixture into the spaces between said tubes and the spaces between said tubes and plates with the corrugations extending transversely of the tubes to dispose the free ends of the sheets against a respective tube sheet, said corrugated sheets having brazing compound applied thereto, sealing the ends of said tubes and applying fluid pressure internally of the tubes to effect expansion thereof and consequent pressing of the confined elements against said fixture and tubes respectively, furnace heating said tubes and corrugated sheets to a brazing temperature, and cooling said tubes and corrugated sheets to the solidification temperature of the brazing compound, said fluid pressure within the tubes being maintained during said heating and cooling operations to insure a firm bond between the tubes and corrugated sheets and resulting in a finished section conforming exactly to the internal dimensions of the confining fixture.

(To Be Continued)

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SALES REPRESENTATIVE. Man with broad experience in air conditioning field wants to locate with manufacturer. Thoroughly experienced on residential and commercial air conditioning, as well as window units and ice makers. Capable of organizing and conducting distributor and dealer sales training programs. Aggressive and promotional minded. Married, willing to relocate and travel. \$10,000 a year minimum. Would consider sales management on distributor level. BOX A5119, Air Conditioning & Refrigeration News.

SALES—I am a top, experienced commercial air conditioning salesman. Can successfully expedite sales in any capacity. Have excellent record of sales in New York City area. Familiar with every phase of the business, including heating, design, cost computation, etc. Desire connection within New York City or adjacent. BOX A5120, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

ATTRACTIVE OPENING with Detroit jobber. Prefer younger man 25 to 40. Must have counter experience. Position offers liberal rewards with a real opportunity to learn and grow. Your opportunity to join a growing organization. LEE EQUIPMENT CO., 4721 Joy Rd., Detroit 4, Mich.

WANTED: SALES engineer by nationally known manufacturer of refrigeration and air conditioning controls. Must be free to travel and willing to relocate. Give detailed summary of education and experience in first letter. All replies confidential. Address BOX A5104, Air Conditioning & Refrigeration News.

MANUFACTURERS' REPRESENTATIVES. National manufacturer of prefabricated sectional walk-in freezers and coolers requires aggressive representatives for midwest territories. High unit sales on specialized line with little competition and fine income. Salable to frozen food packers and distributors, ice cream and dairy industry, supermarkets, dealers and industrial users. Give full resume and phone number replying to: BOX A5112, Air Conditioning & Refrigeration News.

A WELL established southern manufacturer (Tennessee) wishes to hire a man with the following qualifications: A knowledge of and some experience with basic refrigeration systems and their application to residential cooling, the ability to write service and installation manuals, and the ability to conduct service classes for dealers and distributors. Please address all inquiries to BOX A5116, Air Conditioning & Refrigeration News, giving employment history and salary requirements.

MANUFACTURER'S REPRESENTATIVE wanted by manufacturer of complete line of packaged air conditioning units, condensing units, water chillers and year-round residential units, to contact distributors and dealers in southern California and Arizona. BOX A5117, Air Conditioning & Refrigeration News.

SALES ENGINEER needed for small manufacturer, growing and expanding rapidly, specializing in heating and air conditioning, primarily catering to southern markets. Please furnish complete resume of your experience and education, a recent picture, and references to BOX A5118, Air Conditioning & Refrigeration News.

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SWEDEN SOFT ice cream machines. Two double barrel 131A20 machines with 1 H.P. water cooled compressors, used two seasons. \$450.00 each. One Sweden Frigid-mixer (no compressor) used two months \$250.00. One Automatic Sweden 1-190 (2½ gallon) complete with compressor and stand used two months \$775.00. All in good condition. Terms cash, shipped prepaid. GLOVALL EQUIPMENT, 903 Dauphin, Mobile, Alabama.

AUTOMOBILE AIR conditioners complete with Tecumseh compressors, expansion valves, brackets, evaporators, blowers, heat exchangers, crank shaft pulleys, wiring, tubing, receivers, and air grills. These kits are new and in their original crates and carry their manufacturer's warranty. They are available for most late model cars. Single unit price is \$247.00. Lots of five or more \$221.00. Our stock is limited. INDUSTRIAL REFRIGERATION & AIR CONDITIONING CO., 239 W. Hicks Avenue, San Antonio, Texas.

ATTENTION SERVICEMEN: Save 25 to 50% on your refrigeration parts. Send for our catalog of values today. Here is only one of our money saving offers. 1½" O.D. copper connections x 14½" overall vibration eliminators, \$4.65 each. Lots of 10, \$4.00 each. WALTER W. STARR REFRIGERATION SUPPLIES, 2333 Lincoln Avenue, Chicago 13, Illinois.

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13-30-54



NEW CUSTOMLINE COMBINATION two-door refrigerator-freezer with a brushed satin finish, is a built-in model, with a separate food freezer.



MEDIUM-PRICED ECONOMY MODEL Hotpoint refrigerator is the SEC105, a 10.5-cu. ft. model.



DELUXE 1 1/2-hp. room air conditioner has pushbutton controls and "jet stream" air system.

Hotpoint Introduces '55 Appliances--

(Concluded from Page 1, Col. 2) merchandising and sales promotional program at a series of meetings in Chicago, New York, Atlanta, and San Francisco.

John F. McDaniel, vice president, marketing, said the promotional program will be officially launched on May 1, 1955. Within the year-long program is a two-month national consumer contest offering more than \$2,000,000 in prizes, including four furnished homes, 50 kitchen-laundries, and 5,000 appliances.

Additional products in Hotpoint's Golden Anniversary line are:

1. Five 39-in. electric ranges and three 30-in. models. A new 8-in., 2,600-watt "Calrod" surface unit said to be 35% faster than Hotpoint's 1954 8-in. surface units, will be a leading sales feature on the ranges.

The 39-in. range line consists of deluxe double-oven lighted pushbutton (RD-23), single-oven deluxe lighted pushbutton (RC-23), deluxe double-oven pushbutton (RB-66), deluxe pushbutton (RB-65), and standard (RB-63) models. The 30-in. ranges are the deluxe lighted pushbutton model (RH-2), the deluxe pushbutton model (RG-2), and the standard model (RF-2).

2. A new built-in ensemble of

matched equipment, finished in brushed satin chrome. The flush-wall "Customline" appliances include built-in oven and surface units, two-door refrigerator-freezer, and automatic dishwasher.

3. Three automatic electric clothes washers: A "Super" deluxe lighted pushbutton model (LK2), a deluxe pushbutton model (LJ2), and a low-cost rotary dial model (LH7). A feature of the top model is "a new scientifically designed flexible rubber-finned agitator that creates a flexing action." A deep over flow rinse cycle is another feature.

4. Two new automatic electric clothes dryers: A deluxe model (LG2) and an air blower model (LB1). The latter is a rural marketing model for those areas where water is in short supply. The deluxe dryer has automatic temperature control and automatic timer.

5. Three new "Disposalls" incorporating new designs and engineering features including a higher horsepower motor. Two models (MW9 and MWP9) are deluxe types and one (MW10) is a standard continuous feed type.

TOP MODEL HAS 11.5 CAPACITY

Top model of the refrigerator line is an 11.5-cu. ft. two-door model (5EW115) with a separate food freezer capable of freezing and storing 91 lbs. of frozen foods at zero temperatures, according to the company. Fast freezing at zero temperatures in the food freezer are maintained because of aluminum liners, Hotpoint said.

The food freezer door has a metal rack for handy storage of five cans of juice concentrate and when not in use, swings up to permit storage of tall items in the aluminum shelf directly below it. The two-door model has automatic defrosting which gets rid of frost as it forms, turning it into water which is evaporated.

The EW115 model has a complete dairy area on the refrigerator door. It consists of a temperature controlled butter bin, two cheese keepers, an egg rack, and a foil dispenser.

Two roll out aluminum shelves are features of this model. The lower shelf can be used as a full-width shelf or as a split shelf to accommodate large items. The 1955 model has a meat pan capable of holding 12 lbs. of fresh meat or poultry.

Two other combination refrigerator-freezers, 5EH116, an 11.6-cu. ft. single door model, and 5EG102, a 10.2-cu. ft. unit, have many of the features of the top models.

The 11.6-cu. ft. single door com-

bination has a freezer capacity of 75 lbs. of frozen foods. A special latch holds the freezer door against the rubber gasket at 16 lbs. pressure, insuring steady zero temperatures inside, it was stated.

Other features of this model include automatic defrosting, complete dairy area, three aluminum door shelves, special fruit rack at the door bottom, aluminum sliding shelf, a split shelf, 12-lb. capacity meat pan, and two vegetable crispers.

The 10.2-cu. ft. model also has a separate 75-lb. capacity freezer. Features on this model include automatic defrosting, complete dairy area, three aluminum door shelves, special fruit rack, 12-lb. capacity meat pan, split shelf, and

two vegetable crispers.

2 LOW-PRICED MODELS

Two low price models have been included in the line: A 10.5-cu. ft. (5EC105) conventional refrigerator and a 7.7-cu. ft. model (5EB77).

The 10.5-cu. ft. refrigerator has a freezer with a 49-lb. frozen food capacity. This model has push-button defrosting and a full-width chiller tray for chilling beverages, salads, or storing fresh meats. The tray provides additional storage for 16 lbs. of frozen foods. Other features include butter bin, tall bottle zone, three door shelves, two refrigerator shelves, and vegetable crispers.

The 7.7-cu. ft. model has a full-width 32-lb. freezer and a full-width chiller tray for an extra 12 lbs. of frozen food storage. Other features are four door shelves, tall bottle zone, and two refrigerator shelves.

Faster cooling by the air conditioners "is obtained by a powerful blower which forces cool air across a room at a 45° angle and forces warm air down onto the floor," it as explained. The air conditioner then exhausts it. Hotpoint calls this "jet stream" circulation.

The new anniversary pushbutton models feature new exterior colors. The 3/4-hp. model (5EZ40) cools 500 sq. ft., the 1-hp. model (5EZ50) 600 sq. ft., and the 1 1/2-hp. model (5EZ80) a 1,000 sq. ft., the company said.

All three deluxe models have an

automatic thermostat. According to Hotpoint officials there is a plus or minus 4° variance before the thermostat reacts to counteract a warm or cool room, but this minute difference is unnoticeable by the user.

Another feature of these air conditioners "is the 24 different types of controlled weather at the user's fingertips," Hotpoint said. "This is made possible by a variety of simple-to-operate switches that provide weather to meet any circumstance the year around."

The 3/4-hp. and the 1-hp. models have two 360° rotating grilles which permit 16 different air directional combinations while the 1 1/2-hp. model has three 360° rotating grilles which permit 64 different air directional combinations to be obtained.

The 3/4-hp. and 1-hp. air conditioners have a dual purpose heater. It pre-heats outside fresh air for proper winter ventilation and also provides quick heat for damp or chilly mornings.

Another feature of the deluxe models is two-speed cooling. A pushbutton control can either be set at "Hi" for quick cooling with maximum moisture removal during hot sticky weather or the control can also be set on "Lo" for economical night cooling.

"Installation has been simplified," Hotpoint stated. "Three common tools and 30 minutes does the job."

Hotpoint air conditioners will again have the "electrostatic filter" in 1955.

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